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ABSTRACT

The benefits of business/academic partnerships are described from both the corporate and university perspective. Examples are presented which demonstrate ways in which educational institutions have developed collaborative arrangements with area businesses in response to local needs. Communication processes involved in such cooperative agreements are handled in many ways, such as through advisory councils, luncheon clubs, seminars, lectures, and corporate roundtables. Some partnerships focus on improvement of instructional programs, by developing training programs, seminars, workshops, and institutes offered by both university and business personnel. Corporate personnel contribute to the evaluation, revision, and updating of college curricula. Collaborations have made possible the delivery of such direct services by university faculty as on-site training of employees, technical assistance, counseling centers, and management consulting. Sharing facilities and equipment has also been found to be advantageous to both industry and universities. Combining several of these features has resulted in comprehensive partnerships in which the university offers the services of faculty members and students, laboratory space, and other physical facilities, in return for which business provides funds for research, technical assistance, career development, arts centers, and economic development centers. (JDD)

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A REPORT ON BUSINESS/ACADEMIC PARTNERSHIPS

AMERICAN ASSOCIATION OF STATE COLLEGES AND UNIVERSITIES

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EXPLORING COMMON GROUND

A Report on Business/Academic Partnerships

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Acknowledgments

The American Association of State Colleges and Universities (AASCU) has an extensive and significant commitment to developing partnerships between the business and academic communities for the benefit of both. From the outset of his AASCU presidency, twenty-two years ago, Allan W. Ostar has nurtured those partnerships at the national office and throughout the institutional membership. His vision has been rewarded: AASCU institutions have been enriched while at the same time enriching their communities and regions.

The current AASCU Committee on Corporate/College Relations, chaired by President Stephen Feldman of Western Connecticut State University, has been especially active and productive in this vital area. It is through his strong leadership and determination to move this project forward that this book has been published.

The AASCU staff liaison for the committee, Allan Watson, Vice President for Educational Resources and Executive Vice President of the AASCU Foundation, is likewise committed to encouraging positive relationships between the business and education communities. Through the AASCU Foundation, relationships have been established with the business community that should contribute significantly to the successes of AASCU and its members.

When I assumed responsibility for directing this project and editing this publication in February 1987, preliminary work had been completed by Mary Callahan; she merits our thanks for work well done. Likewise, thanks go to Joanne Erickson, coordinator of AASCU publications, for her important contributions to editing and producing the manuscript.

The president of each contributing institution is a vital force in the success of the business/academic partnerships. In addition to the names of the president of the featured institutions, the book lists contact persons who can provide further information. Those individuals were most often the original authors of the various chapters. Their efforts have been significant and are much appreciated.

Finally, AASCU thanks all the people in the academic institutions and businesses noted in this publication. Without their daily efforts, the successes described here would not have been possible.

Joe N. Prince
Senior Consultant

Introduction

The Benefits of Business/ Academic Partnerships: A Corporate Perspective

Nathan S. Ancell, Chairman of the Board, Ethan Allen, Inc.

The business and academic communities are firmly committed to helping create a world in which individuals are enlightened, productive, prosperous, and at peace with themselves and others. At the same time, both communities have distinct missions and methods. Elements of those missions and methods are compatible and, indeed, complementary.

However, the ability to recognize and utilize that common ground has not always been realized on the campus or in the work place. In the past, university faculty members have at times feared contamination of liberal arts education by the business perspective and involvement. Academics viewed themselves solely as educators and businesspeople as trainers. At the same time, businesspeople found the ivory tower perspective of academics to be somewhat fuzzy and unrealistic. As a result, each community avoided the other. Colleges and universities often developed curricula and conducted independent research with little thought about relationships to the external world. Businesses developed internal education programs for personnel and developed discrete research laboratories. As a result, each community was without the enrichment that the other could provide.

In recent years, however, businesspeople and academicians have increasingly found ways to form productive partnerships to realize mutual benefits. These partnerships are the result of enlightened thinking, increased respect, and economic realities. There is an increasing realization that it is neither desirable nor feasible for these two major social and economic forces to exist in isolation. Both entities, and society as a whole, are benefiting from a recognition of common concerns, interests, and abilities. From the perspective of those in business, these partnerships are significant and must continue.

Today, the business world recognizes its responsibility to the well-being of society. It knows it must be a partner in helping create an educated, thinking, producing, caring, feeling, and giving

populace. Survival in today's world—indeed, the world's survival—requires an enlightened citizenry. Neglect of education simply results in the decreasing quality of education's end product: a responsible and responsive public. Therefore, support of quality education becomes a social responsibility. This concern for the quality of life is a responsibility that business is increasingly, and willingly, undertaking.

Benefits for Business

In addition to fostering a better society, the business community realizes some more specific benefits from healthy corporate/college relations. Chief among these is the discovery and utilization of bright and talented university faculty and staff members and students. These individuals constitute a rich source of employees, consultants, and researchers that complements the personnel resources of business. Such individuals often bring a fresh and enlightened perspective to business problems. For short periods of time and for specific purposes, they expand and enrich business, and do so at reasonable cost.

At the same time, businesses can effectively utilize a part of the basic mission of the university—teaching. Corporations have continuing needs for effective education and for training of new and extant employees. The experience and ability of university faculty members can be a positive force in designing and implementing corporate education programs that work. The utilization of this reservoir of talent, rather than investing valuable resources in developing corporate education capabilities inhouse, makes both economic and educational sense. The increased skills and educational levels of personnel result in a more satisfied, more productive work force.

Another part of a typical university's mission is research. Pure research completed in a university laboratory and the applied research finalized in a corporate laboratory are not incompatible; indeed, they are most often complementary. By combining the talented minds of both business and academe and by sharing facilities and equipment, both pure and applied research are able to advance more rapidly and significantly. Increasingly, both parties recognize such collaboration as economically and intellectually feasible and desirable.

The third mission of a university is service. Businesses seek, and need, the individual abilities of university faculty members and the specifically designed service programs of the university. Consulting services for small businesses, development of corporate health and training programs, and library and reference services are among university resources available to the business world. Without these resources, businesspeople—employers and employees—would be far poorer.

Benefits from Business

In return for the enrichment received from the academic community, the business world can reciprocate with certain benefits to the university. Most obvious and direct is the contribution of money for scholarships and programs. Whether for general or specific purposes, such funds are valued not only for themselves but also for their catalytic effect on other donors. Corporate contributions may also take the form of facilities and equipment given to or shared with the university. A less direct, but often effective, form of corporate support occurs when corporate officers and board members use their abilities and connections to encourage legislative support for higher education. Simply put, corporate support can provide the margin of excellence that enables the university to excel in its educational efforts.

Just as the business world benefits from the contributions of academic personnel and students, so can the campus be enriched by knowledgeable and talented individuals from business. Business leaders and employees often serve very ably as adjunct faculty, helping augment curricular offerings. At the same time, they provide valuable service as "real world" contributors to curricular deliberations. They also effectively serve as consultants who bring a business perspective to the operation of the campus, an especially valuable contribution in times of fiscal constraint.

Some Basics of Encouraging Collaborations

The first step in developing corporate/college relations is a simple one: representatives of the two sectors must get to know each other as people. The methods are not new; faculty and industrial personnel exchanges and joint seminars are proven, effective mechanisms. They must, however, be seen not only as means of

meeting specific needs but also as opportunities for people to get to know each other—to better understand personalities and motivations.

Second, each sector must analyze the other. It is essential to understand the mission, the educational or industrial processes, the decision-making mechanisms, and the key individuals in each sector.

Third, educational institutions should place greater emphasis on marketing their capabilities to businesses. Conversely, businesses must convey their potential contributions to academic institutions. The tangible benefits of collaboration must be clearly articulated to all.

Fourth, simply begin; work together in common areas. Nothing overcomes prior stereotypes, misconceptions, and misunderstandings as does attacking and successfully resolving a problem or issue of mutual concern.

A Closing Thought

At the risk of oversimplifying the matter, academics have usually believed that education should give people "what they need"; businesspeople have expected education to give them "what they want." The academy has the unique ability to structure "what they need" in such a way that it provides "what they want." The collaboration of academic and business leaders can contribute greatly to that process. As a result, both sectors will succeed, enabling individuals and, thus, society to reach the highest potential and achieve the greatest good.

The Benefits of Business/ Academic Partnerships: A University Perspective

Stephen Feldman, President, Western Connecticut State University

American higher education has been profoundly affected by the social, technological, economic, and demographic changes that have occurred in the past decade.

The traditional pool of college-age students, which began to decline in 1979, will continue to decline until the mid-1990s. The full-time residential 18-year-old college students who graduate in four years now constitute only 20 percent of undergraduate enrollments, and the number of high school graduates will decline by another 25 percent between 1986 and 1995.[1] While an increase in the number of part-time adult students will partly offset this loss, total enrollments are expected to decline by 1.5 to 2 million students between 1986 and 1995 due to demographic changes in the United States.[2]

Federal support for higher education, including student aid, has sharply declined. While very few public institutions of higher education are struggling merely to survive, the competition for available resources has intensified as state appropriations are reduced or have leveled off. Educational institutions must implement federally-mandated programs concerned with human rights, e.g., for the handicapped, minorities, Title IX. They must also replace obsolescent equipment, computerize administrative and educational programs, improve marketing and fundraising strategies, and so on. These vital needs are often funded at the expense of faculty salaries, scholarship aid, modernization of laboratories, and other budget items that cannot be deferred indefinitely.

Colleges and universities are under considerable pressure today to "pursue excellence," encourage faculty research, improve and revise curricula and instruction, raise faculty and staff salaries, develop marketing plans to offset declining enrollments, and seek outside support.

U.S. industry also faces an array of problems, including present and future staffing difficulties, retraining needs, and shortages in critical areas. American technology developed in the postwar years

has been widely adopted and transplanted to countries with cheap labor markets, making it difficult for U.S. industry to compete not only abroad but at home.

Business and education leaders, for the past ten years especially, have begun to realize how interdependent they are if the problems and pressures they face today are to be solved. In particular, public colleges and universities are increasingly turning to the private sector for support and discovering new and innovative ways in which business and public higher education can assist each other.

Fund Raising by Public Colleges and Universities

Just as land-grant institutions addressed the country's agricultural training needs with the passage of the Morrill Act in 1862, the nation's public colleges and universities today are a major social and economic force in their communities and states. According to a recent article in the *New York Times*, public universities, which now turn out 70 percent of all U.S. college graduates, have made tremendous advances in fund raising in the private sector—virtually the exclusive domain of private research institutions until the mid-1970s.[3] In 1985, public institutions of higher education received 33 percent (or $1.749 billion) of the $5.3 billion in individual contributions to American colleges and universities, whereas in 1958-59, the public institutions' share was 20 percent (or $4.8 million) of $24 million. Corporate support for higher education has been rising as well. Hayden W. Smith of the American Council on Education has stated, "Since 1958-59, corporate support for four-year schools has gone from a 73-to-27 split in favor of private institutions to a nearly even break, 52 to 48."[4]

Corporate philanthropy has long existed in America, but it was only with the legal settlement of the landmark case in the field of corporate philanthropy, *A. P. Smith Company* vs. *Barlow* in 1958, authorizing corporate charitable gifts, that the practice of corporate philanthropy began to gain wide acceptance among progressive leaders of American business. According to Robert L. Payton, president of Exxon Education Foundation, the notion has become generally accepted that the purpose of philanthropy "is to advance the interests of the community at large, usually by supporting those institutions from which the corporation also benefits: hospitals and colleges, to name two of the oldest and most familiar examples."[5]

With private university tuition running as high as $18,000 a year, the public sector can anticipate attracting more and more intellectually able students who are not financially willing or able to pay high undergraduate tuition. Higher education will also be able to expand the ways in which it serves the business community in meeting personnel and training needs.

New Forms of Partnership

Corporate managers are realizing it is in their own best interests to support the institutions that are training their present and future employees. Education leaders are turning to local industry not only for financial support, but are discovering new forms of mutually beneficial collaboration and partnerships.

In the past, many in academe and industry viewed each other's goals as incompatible, if not antithetical. Yet, as the case studies in the book demonstrate, the long-range goals of education and business are not so different, although approaches and ultimate ends may vary. Once a dialogue has begun between representatives of education and business, the benefits of partnership to foster common goals become clearly evident, with even more promising results anticipated in the future.

A 1985 report of the American Council on Education states that of the 1,933 institutions of higher education surveyed, "almost all have formal links with the corporate community." These include 85 percent having joint meetings or advisory panels; 75 percent having programs to share, donate or loan equipment; 63 percent having scholarships or loan programs; and 65 percent receiving financial support from business and industry for research.[6]

Thirty-six members of the American Association of State Colleges and Universities have contributed information for this book. These institutions vary by size, history, and emphasis. They have enrollments ranging from a few hundred to over thirty-five thousand students. Many are the only public institutions of higher education in their regions, and for many people, represent the only access to a college education.

Benefits of Collaboration

All American communities are served by businesses, chiefly small businesses. These smaller businesses, in partnership with

public colleges and comprehensive universities, are filling a vacuum left by the larger research universities whose affiliations tend to be with major research corporations. A 1982 study of comprehensive universities in California found that faculty members at institutions not primarily research-oriented had opportunities for consulting in local industry and for participating in the development of new and innovative projects.[7]

Another study on the expansion of cooperative ventures between comprehensive universities and industry analyzed the impact of these developing relationships. All public institutions classified by the Carnegie Council on Higher Education as Class I Comprehensive Colleges and Universities were included in the survey. It was found that public colleges and universities wish to enter into cooperative arrangements for many reasons. Most respondents in the study considered the following objectives to be of critical importance:

- enhancing instruction, research, and public-service programs of the universities
- providing opportunities for faculty/staff research and consulting
- preparing students for employment
- promoting economic development
- serving the needs of industrial constituents
- offsetting reductions in institutional resources.[8]

The study demonstrated that higher education and industry benefit from collaboration. Faculty have opportunities for consulting and research with access to state-of-the-art equipment and are brought up to date on advances in their fields. Students, in turn, benefit through internships, cooperative education programs, and contact with industry personnel.

Training and Retraining Needs

There are no boundaries among disciplines: they overlap and mingle. Contemporary science, technology, and management techniques—to name only a few areas—are constantly evolving. Similarly, education is not obtained solely in schools. The Council for Financial Aid to Education reports that

> Twelve million students are formally enrolled in higher education institutions. Yet business provides organized noncredit educational programs to millions more. . . . At

> least a dozen companies offer degree programs. Add courses offered by government, the military, the churches and other organizations and you may have more than 40 million Americans involved in some form of ongoing postsecondary education.[10]

Business still looks primarily to educational institutions to fill its needs. The training required in the work place for adult learners represents an effective way in which colleges and universities can effectively utilize their resources, especially if they are facing retrenchment. Business can offer educational institutions support in a variety of ways that can provide the margin of excellence for public higher education that would not be feasible solely with state appropriations.

Summary of Collaborative Arrangements

The examples in this book demonstrate the highly individualized ways in which educational institutions have developed collaborative arrangements with area businesses in response to local needs. One can, however, discern corporate relationships that span the spectrum, from advisory boards to comprehensive centers. Cooperation is now viewed as interactive, with both business and education receiving benefits.

This book can serve not only as a guide for public institutions interested in establishing, expanding, and/or strengthening ties with the corporate community, but can also enlighten leaders of business and education about the concrete and potential advantages of cooperation. Business confronts many of the same problems as education does, especially in the area of educating, training, and retraining young people and adult learners to play productive roles in the life of the nation. For many, this will mean changing professions more than once in a lifetime.

Some of the ways in which states colleges and universities are cooperating are described below.

Advisory Councils. As noted earlier, most higher education institutions have some type of advisory council composed of business and other community leaders. These councils contribute to the life of the college or university in many ways, such as fund raising, supporting cultural and athletic programs, and developing

curricula. The role of advisory councils ranges from advice to an active, aggressive role in formulating policy and fostering the welfare of the institutions they support.

Support for Academic, Cultural, Civic, and Athletic Events. Many corporations sponsor, often on the college campus, lectures and other public events open to the university and business community and often to the general public. These events are not only informative and intellectually stimulating but also generate good public relations for the sponsoring organizations. Similarly, there is substantial business and community support for academic, cultural, and athletic events—not just financial support, but often leaders' direct personal involvement in their activities. Again, such support fosters good relations in the community and bolsters recruiting programs and fund-raising drives, and tends to increase the interest and support of other members of the community. For example, faculty works of art are frequently exhibited in and sold to area businesses; some corporations have not only sponsored concert series but have enabled university cultural groups to travel to other locations, thereby raising the visibility and reputation of the university and sponsoring company.

Curriculum and Instruction. Corporate personnel are also contributing to the evaluation, revision, and updating of college curricula through participation in advisory councils and university committees and, sometimes, as adjunct faculty members. The input of industry personnel has been particularly valuable in planning programs in business, engineering, technology, and specialized fields that have immediate applications in the work place.

Training programs, seminars, workshops, and institutes are offered both by university and business personnel on a wide variety of subjects, including computer language, management developments, nutrition, agriculture, technical programs, teacher training, and other credit and noncredit offerings.

Student Assistance. Student aid programs sponsored by business range from outright scholarships to internships, in which undergraduates have the opportunity to work and receive training in their major field of study. Cooperative education, through which undergraduates—usually juniors and seniors—engage in a work-study program for pay and academic credit, is perhaps the most popular form of partnership not only with industry, but with em-

ployers from the public sector. The coop program has proven tremendously effective not only in providing on-the-job experience to college students by giving them an early start in their professional fields, but as a recruiting instrument for the employing organizations. The gap between the "ivory tower" and the "real world" is thus bridged before students graduate.

Other programs, such as career days and outreach programs, bring other members of the community—e.g., high school students, minorities, the gifted—into contact with academic and corporate professionals. Science fairs, special awards, prizes and other forms of talent recognition are other ways corporations sponsor and/or underwrite educational programs that reward achievement.

Support for Research. Financial support of research in public colleges and universities has been instrumental in enabling faculty members to obtain released time, to employ undergraduate and graduate students, to attend research conferences, and to purchase equipment and supplies—all of which result in the advancement of knowledge and the training of students. In addition to direct financial support of research, other benefits include technical assistance and collaborative efforts with industry personnel.

Direct Delivery of Services. This book contains descriptions of successful collaborations involving on-site training of employees. The benefits to companies and their employees include no lost time at work in order to travel to a campus (which many employees with family and other responsibilities could not undertake) and immediate application to employees' work, whether they are receiving training or retraining.

Universities benefit from fuller utilization of their resources; this is especially important to those institutions whose enrollments are declining. Educational institutions report the implementation of numerous specialized programs, seminars, and institutes held on-site in plants and other employer locations. Public colleges and universities are entering into consortia of school districts and industry to promote employee education and recruitment. In some instances, telecommunication facilities are being utilized to broadcast instruction from classrooms to industrial sites. Other collaborative arrangements include technical assistance and/or counseling centers, clearinghouses, management consulting, and management and technical study groups.

The programs in this area are as diverse as the AASCU institutions represented in this book. They all have in common the development of approaches to attack and to solve problems that are confronting both business and higher education in their own regions.

Resource Sharing. Resource sharing might potentially become the most significant component of college/business collaboration. Resource sharing includes, first of all, human resources—faculty and professional staff members, students—as well as equipment, computers, and other physical facilities.

The opportunity for faculty members and students to conduct research at their own institutions might be limited because of insufficient laboratory resources, heavy teaching loads, and committee assignments, or lack of institutional emphasis on research. The same applies to consulting. Small companies, in particular, welcome the expertise of faculty familiar with local conditions. Academic institutions are benefiting from contracts with corporate executives, scientists, engineers, managers, and others who deal with market-place realities. Again, the range of cooperative agreements includes executive-in-residence programs, adjunct appointments for industrial personnel, consulting and research assignments for faculty in industry, executive-on-loan programs, student internships and cooperative programs, and faculty/industrial personnel exchange programs.

The advantages of sharing equipment are readily apparent. Public institutions cannot afford to purchase and maintain a wide variety of laboratory equipment and supplies, so they do benefit substantially from donations of equipment, which can be used for both research and instruction, as well as from equipment loans and equipment sharing. Some institutions have become extremely creative in developing forms of resource sharing, including bartering one type of service needed by industry in exchange for the use of the industry's equipment.

Many public colleges and universities are engaged in particularly close relationships with industry to promote student or faculty participation in scientific and engineering projects, in artistic events, and in international business, to name just a few areas. They have developed formal business arrangements with each other, including the exchange of services for equipment, the use of education or business facilities, the leasing of land to business for low

rent in exchange for future reciprocity, and business marketing research conducted at academic institutions.

Comprehensive Centers and Other Types of Partnerships. In this book, AASCU institutions note their experiences with comprehensive canters and institutes and/or campus involvement in several types of partnerships. Again, these programs have been tailored to meet regional needs. The university can offer the services of faculty members and students, laboratory space and other physical facilities in return for which business provides funding for research, technical assistance, career development workshops, donations of equipment and instructional materials, arts centers, economic development centers, center for entrepreneurship—the list of activities varies as much as the collaborators do.

Conclusion: Benefits Now and Later

Public higher education has played a unique role in the history of our country, making it possible for millions of people to receive a low-cost, high-quality college education. If public colleges and universities are to continue to offer quality education, they must look for new ways to serve their constituents and to finance these services. This book, through its examples of university/business collaborative arrangements, demonstrates clearly that our leading public institutions are taking advantage of the opportunities offered by business partnerships. They are discovering that once a corporation has made in investment in a university, that corporation will become committed to the continuing success and expansion of the university.

Finally, as the business and higher education communities become more integrated, they will begin to more fully appreciate each other's goals, aspirations, and objectives. This increased understanding can only serve to strengthen American higher education as well as business and, ultimately, American society.

The author gratefully acknowledges Ruth Corbett, Associate Director of Research and Grants at Western Connecticut State University, for her work in the research and preparation of this chapter.

Notes

[1]*Corporate/Campus Cooperation,* Report of the Council on Financial Aid to Education, March 1986, p. 4.

[2]*Corporate and Campus Cooperation: An Action Agenda,* Business-Higher Education Forum Report, Washington, D.C., May 1984, p. 10.

[3]Edward B. Fiske, "State Colleges Seeking Share of Philanthropic Pie," *New York Times,* 29 July 1986, p. 1.

[4]Ibid., p. A11.

[5]Robert L. Payton, "The Taming of the Corporation: Private Sector Responsibility," *Change,* January/February 1985, p. 28.

[6]Elaine El-Khawas, *Campus Trends 1985,* American Council on Education, February 1986, p. 7.

[7]Frank A. Darknell, "Collaboration with Industry in the California State Colleges," *Journal of College Science Teaching,* 11:358-62.

[8]Lawrence B. Logan and Jacob 0. Stampen, "Smoke Stack Meets Ivory Tower: Collaborations with Local Industry," *Educational Record,* Spring 1985, pp. 26-29.

[9]Ibid.

[10]*Corporate/Campus Cooperation* (Washington, D.C.: Council for Financial Aid to Education, 1986) p. 4.

Business/ Academic Partnerships

Part 1

Communication Processes

1

California State University, Long Beach

Advisory Councils

Stephen Horn, President
Nancy S. Sheley, Director of Special Projects

Institutional Setting

From an original student body of 161 and a faculty of sixteen in 1949, California State University, Long Beach (CSULB) has grown into one of the three largest universities in California and the largest in the 19-campus CSU system. Housed on a 322-acre campus twenty miles from Los Angeles and three miles from the Pacific, CSULB now has more than 4,000 faculty and staff members serving over 32,000 students from every state and 111 foreign countries.

CSULB offers 128 degree and degree-option programs at the baccalaureate level and seventy-one at the graduate level. In addition, the university offers some fifty-two certificate programs. The university's eight schools (applied arts and sciences, business administration, education, engineering, fine arts, humanities, natural sciences, and social and behavioral sciences), the graduate center for public policy and administration, and the center for international education provide an outstanding learning environment not only for high school and community college graduates, but also for thousands of men and women already midcareer in various occupations and professions.

Nearly one-third of CSULB students are married adults; one-third work full-time in addition to pursuing their studies. Over 75 percent of the university's more than 120,000 alumni continue to live and work in Southern California, where they provide leadership and expertise in the community in such fields as the arts, banking, business, education, engineering, journalism, criminal justice, medicine, and the natural sciences.

CSULB serves Los Angeles and Orange Counties in Southern California. The population of this major metropolitan area exceeds

9.9 million and increases monumentally, last year at the rate of 1 million. The fourth-largest industry in Long Beach, CSULB has a total annual budget of $132.5 million.

Among the major corporations in the LA basin are McDonnell Douglas, TRW, Hughes Aircraft, Northrop, Security Pacific, First Interstate Bank, Pacific Telesis, and Rockwell, to name a few. It is to this market that CSULB directed its first major corporate relations effort by establishing a network of advisory councils. Begun in the 1970s with several model councils, the project has evolved into an effective connector to the corporate community.

The Program

California State University, Long Beach has more than 850 community representatives serving on thirty-four advisory councils for schools, departments, and special interest centers on campus. Varying in size from 25-60 each, council membership draws from the large base of corporate, educational, and business leaders in the Los Angeles/Orange County area, thus creating a network of responsive professionals assisting the university. This network continues to grow.

Typically, the advisory councils meet on campus twice a year for two-hour sessions. The president or a representative welcomes the group and relays pertinent information about the university as a whole. Presentations are made by the dean, faculty members, and students. Generally, whole-group or subcommittee discussion follows on topics of particular interest, such as development, curricula advisement, student recruitment and placement, and outreach.

Besides sharing their expertise and practical experiences, advisory council members offer substantial financial support to the university in funds for new projects and donations of new and used equipment. The hiring of CSULB students on a part-time basis, the establishment of adjunct professorships, and internship placement are vital to council interaction with the university.

Advisory councils grew from a recognized need at CSULB for input from outside the campus and a determination to keep pace with current trends in the professional and corporate community.

The metropolitan, mega-corporate environment of the Long Beach area provided ample resources for outside connections. Major aerospace companies, entrepreneurial upstarts, research and

development organizations, Pacific Rim banking, and trade links could all be tapped. The key to success was simple: to make personal contacts, identify mutual needs, provide appropriate responses, and secure commitments.

The president, in consultation with the special assistant for development, refined the advisory council concept for CSULB. Drawing from the model of the president's advisory committee, they determined that each school in general, and each department or area in particular, could benefit from the exchange of opinions, facts, and interactions. Among the first CSULB divisions to establish councils were chemistry, physics, engineering, nursing, and business. In 1979, there were fourteen councils in place, with 400 individuals active on the boards. By 1986, the councils totaled thirty-four, with more than 850 individuals participating.

The original appointments named top executives and influential community members to council positions according to interest and expertise, thus combining both talented citizens and corporate executives in the network.

In general, nominations are made at the department or school level and are approved by the president. The objective is to secure the highest-level executive to serve on the board. Often, corporations nominate members from their own ranks to replace former members lost through transfer or retirement.

Once the appointment is made, responsibility for personal contact remains with the school or department faculty and administrators. However, university contact is made through publications and special events arranged by the director of special projects in the office of development, by the president, and by other administrators.

At the university level, the director of special projects oversees the advisory councils. In that office, the master calendar is established, letters of nomination sent, membership lists updated, and general files of meetings and agenda kept. The director of special projects supplies handbooks and other information about the purpose and maintenance of advisory councils, holds resource meetings for staff and administrators, and plans special events involving members of all the councils. The director, in the role of consultant, attends as many of the meetings as possible.

The schools and departments arrange the details of each meeting. Agendas and special programs are developed by the dean, the chair, and/or faculty members, working with advisory council personnel when possible. The department or school secretarial staff is in charge of the arrangements and correspondence for the council.

Funding for this project is available from several sources. Initially, money was provided by the president's discretionary funds. However, as the councils become more active, they often become self-sufficient. Additionally, the schools have discretionary money from other development efforts that are used to support council activities. One council has a fund-raising awards banquet that provides enough surplus to pay for the two luncheon meetings held each year.

The advisory council project is only one aspect of the total corporate relations effort at CSULB. The vice president for development is the university's official representative to the corporate community. In this role, he also attends as many advisory council meetings as scheduling permits. Further, he follows up with personal contact at the corporation offices when feasible, suggests names for council membership, reviews nominations from the departments and schools to prevent duplication of prospects, and is a consultant on mutually beneficial projects for the schools/departments and corporations.

The advisory councils serve as a vital link and catalyst for more successful academic programs and projects that benefit students and faculty as well as provide positive rewards to the participating companies. The chemistry department's advisory council, for example, has funded several projects that directly affect the department's operation and reputation. Additional funds support recruitment and travel for faculty, financial aid for graduate student research, equipment contributions, scholarships, and opportunities for employment for students. Funding for a distinguished lecture series and adjunct professorships filled by corporate executives to supplement instruction have been obtained through advisory council efforts.

From the university perspective, council members as a group are receptive audiences for interpretations of policy and publicity and can provide widespread legislative and public relations sup-

port. Advisory council members continue to promote a positive image of the university to the various council constituencies.

Corporations benefit from representation on the councils with firsthand exposure to the curricula, faculty, and current research efforts. On most councils, members actively examine the curricula and offer responsible suggestions for change. Members benefit, too, through association with other professionals and executives in their areas and through establishing lines of communication to assist in recruiting the top graduates in the field.

Advisory council participation is an involvement in the process of education, the hands-on, face-to-face communication that can—and does—make a difference.

Given the successes of the advisory council program, it will continue to grow at CSULB. Additional councils will be established in the fine arts, journalism, and other areas in the near future. Although the numbers seem staggering, the more council memberships increase, the stronger the ties become with outside contacts. A newsletter for and about advisory councils is in the planning stages and should greatly enhance communication.

Two CSULB resource papers discuss the establishment of advisory councils:

- ***What Makes Advisory Councils Work?,*** Nancy S. Sheley, director of special projects. Overview of philosophy of councils, suggestions for contact, collegiality, content, continuity.
- ***A Guide to the Organization and Management of Advisory Councils at California State University, Long Beach,*** Howard L. Still, former vice president for development. Gives samples of membership letters, agenda, name tags, placecards, table arrangements for meetings.

2

Georgia College

School of Business Advisory Cabinet

Edwin G. Speir, Jr., President
Ralph W. Hemphill, Vice President/Dean of Faculties

Institutional Setting

Georgia College, a senior college of the University System of Georgia, is a comprehensive, coeducational, residential institution. Established in 1889 as Georgia Normal and Industrial College, the name was changed to Georgia State College for Women in 1922. In 1968, the college opened its doors to men for the first time, and as Georgia College, has continued its nearly century-long history of academic excellence.

The college's enrollment is approximately 4,000 students majoring in fifty-eight disciplines at the undergraduate and graduate levels, in four schools. Degrees are offered in arts and sciences, fine arts, business administration, education, home economics, nursing, and public administration. Georgia College serves the citizens of middle Georgia in four locations through a cooperative effort with area community colleges. The main campus of the college is located in downtown Milledgeville.

The city of Milledgeville, designed for and functioning as the capital of Georgia from 1804 to 1868, is the county seat of Baldwin County. It is located ninety miles southeast of Atlanta, thirty miles northeast of Macon, and sixty miles northeast of Warner Robbins. The Macon-Warner Robbins Metropolitan Statistical Area is projected to be one of the fastest-growing regions in Georgia for the remainder of the century. The city is the governmental, industrial, and commercial center of its county. In 1980, Baldwin County had a population of 34,686, 35 percent of whom lived within the Milledgeville city limits.

State government facilities in the Milledgeville-Baldwin County area, including Georgia College, the Middle Georgia Correction-

al Complex, and Central State Hospital, employ 55 percent of the local work force. Georgia College employs more than 350 people and has an annual payroll of over $12 million.

The unemployment rate for the area is less than the state average, which is approximately 6 percent. Major industries in the area include Grumman Aircraft Systems, Kendal-McGaw, Rheem, J.P. Stevens, Meadows Industry, West Point Pepperell, Horton Homes, Enterprise Aluminum, Georgia Power, Hollytex Carpet Mills, Baldwin Manufacturing, and a number of kaolin companies, all within approximately twenty-five miles of Milledgeville.

Georgia College's school of business has thirty-eight full-time faculty members, approximately 1,200 undergraduate majors, and 350 graduate majors. It has a long tradition of interaction with the local business community. The following programs exemplify this interaction.

The Programs

The School of Business Advisory Cabinet functions as an advisory group to the faculty and students. The cabinet endeavors to develop a professional base for the exchange of concepts, ideas, and pragmatic solutions to existing and future potentials and problems of the school. The major goal is the support of a program that will meet the particular needs of middle Georgia in those areas and disciplines necessary to provide a broad-based, well-rounded, and superior education for business students. Cabinet objectives are to:

1. Identify meaningful academic and service priorities for the school of business to foster future growth and development.

2. Provide continuing advice to the school of business on the curriculum and on resource and facility development.

3. Develop a system of communication for the students, faculty, and administration of the school of business with the business community to facilitate placement, professional development, and continuing education, including internships and cooperative education programs.

4. Promote closer student-business community relations through guest lectures, company tours, and other means of acquainting students with the nature and attractiveness of careers in particular industries.

The cabinet consists of twenty-five top executives of industries and businesses in the Georgia College service area. They come from local financial institutions, kaolin mills, public schools, major industries in the area, and the Georgia Business and Industry Association.

The cabinet was formed in 1977 by a combined effort of the president of Georgia College and the dean of the school of business. In transforming the department of business and economics into a school with five separate departments, it was believed a business advisory cabinet would be beneficial in giving the school guidance to better prepare its students for business careers. A list of potential business members was created and invitations for membership extended. After receiving letters of acceptance, the newly formed board held an organizational meeting.

The cabinet is administered under the supervision of the dean of the school of business. A chairman is elected from the membership to serve for two years. Group organization includes standing committees on current issues facing the school of business, including faculty recruitment, program development, and accreditation. Arrangements for the semiannual meetings of the cabinet are handled by the dean of the school of business and staff. Meeting expenses are paid by the college out of development funds.

The Economics for Executives Forum, another venture of the school of business, offers an opportunity for chief executive officers of the business community to meet and discuss local issues of mutual interest and to hear presentations on current topics helpful in operating their organizations. Each year an invitation is extended to local businesspeople to participate in the forum. Normally, the membership consists of 30-40 businesspersons. The group meets monthly for a dinner program. A portion of each program is reserved for questions from the participants.

An annual membership fee of $150 covers the cost of the meetings. Memberships are listed in the name of the organization, with the chief executive officer serving as the official representative. When the primary member cannot attend, another member of the organization may attend. Business membership includes the top officers of such companies as Thiele Kaolin Company, Cherokee Products, West Point Pepperell, Georgia Power, Grumman Air-

craft Systems, Burgess Pigment Company, Atlanta Gas Light, and the local chamber of commerce.

In addition to business leaders, the membership includes the college's president, vice president of development, vice president of academic affairs, vice president of finance, vice president of student affairs, and dean of the school of business.

The program was started fifteen years ago by the president of Georgia College, an economist and former General Electric executive, and a group of businessmen interested in meeting to discuss issues of mutual interest. After the founding president's retirement five years ago, the program continued under the direction of the dean of the school of business, with assistance from a five-member steering committee. The steering committee and dean determine program topics and possible candidates for membership. Dinner meetings are held on the college campus. The dean's office handles all the arrangements and prepares all necessary communications. There is usually a surplus in receipts from the forum, and these moneys constitute a discretionary fund for the school of business.

A third program of the School of Business is the annual Business and Industry Conference, a one-day program designed to strengthen ties with the business community, to provide input from area business leaders, and to provide an opportunity for students, the business community, and area and national business leaders to convene. Over the past ten years, many nationally known business leaders have addressed the conference, including Herman W. Lay, chairman of the board of Pepsico International; Truett Cathy, president of Chick-Fil-A; General James Lindberg, vice president of Dart Industries; and Philip Hays, general manager of General Telephone and Electric Company.

The program was formed in 1977 at the suggestion of the school of business advisory cabinet, which saw the benefits of bringing nationally known business executives to campus to interact with business students and local business persons.

The program is administered by the dean of the school of business, working closely with the president and vice president of academic affairs to determine annual conference topics and goals. Within the school of business, a committee of faculty members and students determine speakers, conference dates, and procedures for operating the conference. The committee consists of one faculty

member from each of the school's five departments and the president of each of the business student organizations in the school.

An invitation to attend the conference is sent to local businesspeople. A conference fee of $30 per participant is charged to cover expenses. Since all business students are dismissed from classes to attend the conference, they have an opportunity to interact with successful businesspeople. The presidents of the school of business professional student organizations participate in the program by introducing conference speakers.

The Cooperative Education and Internship Programs of Georgia College are examples of cooperation between business and academe. These academic programs allow students to compliment their classroom training with planned periods of work relating to their chosen careers. The programs broaden students' knowledge and understanding of the relationship between classroom instruction and the world of work. The integration of formal education and hands-on training produces graduates who possess a greater depth of knowledge in a chosen career field, and provides the employing community with highly motivated, mature candidates.

The cooperative education program is a long-term work-study program designed to give the students maximum exposure to the career world. The program forms teams of two students who alternate terms in the college curriculum and the work program. Students and employers generally commit to a minimum of two work quarters for each student. (Three or more quarters are preferred.)

The internship program consists of a single-quarter work commitment designed for those businesses or agencies not able to make long-range commitments, but whose needs are immediate and involve a specialized project or task. These projects provide the student with a career-related learning experience. Students are encouraged to participate in successive but varied internship projects. This activity has been extremely valuable to the students by allowing them to explore occupational settings in a given discipline and examine day-to-day operations in a real work setting.

The internship program at Georgia College began in 1971-72. Both the college and the employing community began to recognize the need for a mutually beneficial relationship whereby students could be given the opportunity to develop realistic career goals as well as receive a degree. The concept of a field experience was not

new but had been limited to a few disciplines. Faculty members in many academic departments recognized the business community's need for graduates with realistic career goals and began to develop and promote this concept to students. In order to maintain the academic integrity of these field experiences, the departments developed a formalized selection and evaluation process.

By the end of the 1974-1975 academic year, the internship program was well established, with 154 students participating. Through the strong college/community communications link established with the intern program, the cooperative education concept was phased in to allow for a longer work-study period.

The deans and select faculty participants proposed formal collegewide policies to establish uniform eligibility requirements and academic standards for students applying to the program. A central office for cooperative education and internships was established to provide a support service to each academic department. This office had the responsibility of records maintenance, program development, employer relations, and student recruitment and selection for placement referrals.

Today the cooperative education and internship programs at Georgia College are administered through the office of career services, which now offers comprehensive programs for a variety of career-related programs. The office of career services is housed within the division of academic affairs, and the director of career services reports to the vice president for academic affairs. The program director has responsibility for administering the cooperative education and internship program in cooperation with a designated intern/coop coordinator in each academic department.

Annual placements for the cooperative education and internship programs average approximately 160 students per year: some forty students participate in a long-term work-study arrangement, and another 120 students work in a single-quarter intern arrangement. Approximately seventy businesses and agencies participate in the programs each academic year. As of fall 1986, a total of 2,117 students had successfully completed a work assignment in these programs.

These two programs have been highly beneficial in facilitating interaction between the campus and the business community. They provide a channel of communication allowing an employer to

become a "field faculty member," providing the use of the company as a laboratory experience for a student. This relationship benefits both the college and employer. The employer's perspective on the formal academic curriculum, and the overall preparation of students for careers in a given occupation, benefit the college. Through direct supervision of students in the program, faculty members share their expertise in theory and technology with business professionals.

Students benefit from this communication link as they apply classroom theory to the projects or duties assigned in a given work setting, and as they relate new ideas and practices to the organization. They also benefit from the contacts established within a specific occupation, thus establishing themselves as potential future employees. Many students who have participated in these programs have returned to their intern or coop employers after graduation, or have, through employer recommendation, secured permanent career-related positions.

3

Kean College of New Jersey

College/Business Council Executive-in-Residence

Nathan Weiss, President
Ellen M. Fraites, Director, Community Relations

Institutional Setting

Kean College of New Jersey (KCNJ) was founded in 1855 and for the next century was devoted to the development of educators. In 1958, the college moved from Newark to Union Township, occupying 120 acres of the historic Kean estate. Since that time, the institution's character, size, and scope have been dramatically transformed.

3

Twelve thousand students now attend Kean College, receiving instruction in the arts, humanities, sciences, applied disciplines, and teacher education. The college promotes traditional areas of study while expanding those programs which address emerging societal needs such as the health professions, administrative sciences, and human and social services. There are forty-eight undergraduate and graduate academic degree programs.

The college is administered by a president and three vice presidents in the areas of students services, academic affairs, and administration and finance. A dean of academic services and deans of three schools (education, technology, and related professions; humanities, social and administrative sciences; and natural sciences, nursing and mathematics) comprise the academic unit of the college.

The Program

Five years ago, faculty members and administrators from Kean College and representatives from the business community established the Kean College Campus/Business Council. The council was designed to enhance communication and cooperation between the college and New Jersey, to find better ways of using the resources each can provide, and to undertake projects beneficial to both.

Among the deliberations and activities, two merit attention here. The council concluded that Kean College students would be well served by increased exposure to issues currently facing New Jersey business. As a result, with the assistance of the Eastern Union County Chamber of Commerce, Kean College faculty developed a special interdisciplinary seminar. Featuring a speakers' forum, the seminar included a debate component for students. Among the speakers participating in the forum, open to the entire community, were several Kean College faculty members, the director of New Jersey's division of consumer affairs, a bank president, and executives from such leading corporations as Exxon, New Jersey Bell, General Motors, and the American Gas Association.

Second, the College/Business Council established an Executive-in-Residence Program for Kean College. The program encourages greater interaction between the business world and the college community through visits by corporate executives to the col-

lege. Such interaction leads to more communication and greater understanding between the corporate world and academe.

The program allows the executive-in-residence to contribute to curricular discussions based on real-world business needs; to help establish and strengthen student internship programs; to serve as a guest lecturer in classrooms; to assist in the recruitment of adjunct faculty from the corporate world and, conversely, to encourage the use of faculty consultants in corporate concerns; and to assist in the direct job placement of students.

As an executive spends time with the institution, business colleagues begin to identify the executive with the institution. Thus, the post becomes an important conduit between the college and the business world. In general, the executive's presence on campus catalyzes a review of current practices and attitudes of the educational process and the role academe plays vis-a-vis the corporate sector.

Great care is taken in selecting of the executive-in-residence. The executive should be well advanced in the corporate hierarchy. Further, he or she should come from a medium-to-large firm in an industry that is locally important. The executive should be highly visible in the business community.

Both the college and the business community have benefited from the Executive-in-Residence Program. Increased communication and understanding have resulted in both arenas; thus, immediate and long-range cooperative efforts can only be enhanced.

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Midwestern State University (TX)

Bureau of Business and Government Research
Streich Family Lectures on Free Enterprise

Louis J. Rodriguez, President

Institutional Setting

Midwestern State University's (MSU) campus is a tree-shaded academic complex covering 170 acres in Wichita Falls, Texas, a prosperous city of 100,000. Wichita Falls lies approximately 135 miles northwest of the Dallas-Fort Worth area in the heart of a vital metropolitan area of 350,000 people.

Midwestern State University's academic programs include the traditional liberal arts degree at the bachelor's and master's level, as well as applied programs at the baccalaureate and associate levels. The university offers nine associate degree programs, baccalaureate degrees in forty-six academic areas, and twenty-one master's degree programs. In the fall 1986 semester, MSU enrolled 4,482 students, of which over 600 were at the graduate level.

Organizationally, MSU's academic divisions are social and behavioral sciences, education, humanities, mathematical sciences, science, fine arts, business, health sciences, and political science and public administration.

Approximately 1,000,000 square feet of building space facilitates university activities. Since 1981, MSU has made additions or renovations to the physical plant totaling over $17 million.

Since 1971, more than a dozen major industries have moved to Wichita Falls, increasing the work force by more than 15,000 and creating numerous employment opportunities for MSU students and graduates, as well as enhancing the cosmopolitan and economic growth of the city. The economy of the area is based on retail trade, government, manufacturing, oil, and agribusiness. Sheppard Air Force Base, the Wichita Falls State Hospital, Midwestern State University, and the City of Wichita Falls are the largest government

employers in the area. Industries that have moved into the area over the last fifteen years are: Howmet, Washex, Sprague Electric, Certain-Teed, AC Spark Plug, Siemens Allis, PPG, and Cryovac. These plants added to the already existing employment opportunities offered by Levi Strauss, Preston Dairy, Borden, Ski Master, Piping Engineering, Texoma Fertilizer, and Wallace Manufacturing.

The Program

Midwestern State University and the Wichita Falls Board of Commerce and Industry (BCI) have worked closely to meet the manpower needs of the area. For example, the industrial community recently expressed the need for engineering technology graduates. Through the efforts of MSU and the BCI, funding and approval were obtained for MSU to offer the Bachelor of Science in engineering technology. The program meets both the needs of industry and prepares students to begin work immediately following graduation.

The Midwestern State University Bureau of Business and Government Research offers programs to foster university and business community relations and to provide traditional regional economic research. It also serves as a regional economic data-base center. The bureau offers business, economic, and government data, as well as research references, to the faculty, students, and public. Bureau publications include the *Conference Series*, the *Bureau Report*, and the *Midwestern Business and Economic Review*. The *Conference Series* is the proceedings of annual conferences sponsored by Midwestern State University. The *Bureau Report* is a quarterly newsletter containing a short article related to the local economy and a list of regional data. The *Bureau Report* has been a major vehicle for informing the business community of the regional economic trends. Some 700 copies of the *Bureau Report* are mailed to businesses and other interested individuals in the North Texas area. The *Midwestern Business and Economic Review* (semi-annual) contains technical research papers in the areas of economics, business and government. The *Review* is distributed to universities throughout the Southwest, high school and public libraries in North Texas, and businesses in the immediate region.

The bureau also sponsors research requested by various area businesses and community organizations. A faculty member is appointed to supervise (a) student researcher(s). The projects may

include marketing studies, population projections, financial planning, small business planning, and other activities. Fees for the projects are usually paid by sponsoring businesses. Some business firms with limited research capabilities find it extremely beneficial to make use of technical resources available through the university's business division.

The bureau periodically sponsors seminars conducted by MSU faculty. The seminars cover specific topics of interest in business and government. Prominent businesspersons, specialists, and government officials from the surrounding communities are invited to share their knowledge and experience with the public, the faculty, and the students of MSU. Previous seminars have addressed productivity, public utilities, employment, international trade, and the oil industry.

Two annual activities sponsored by the Bureau and the Wichita Falls community are the Midwestern State University-Wichita Falls Board of Commerce and Industry (MSU-BCI) Economic Conference and the Streich Family Lecture on Free Enterprise.

The MSU-BCI Economic Conference provides a forum to discuss economic issues of regional interest. The conference was originally conceived by the president of the university to promote greater interaction among the faculty, students, and Wichita Falls business community. The annual event, held in late fall, convenes approximately 400 individuals, 120 business leaders, thirty faculty members, and 250 students. The half-day program concludes with a keynote luncheon speech by a nationally or regionally prominent speaker.

The steering committee for the conference is composed of representatives of the Wichita Falls Board of Commerce and Industry, business faculty members, and the president of a student organization. Topics of interest are also noted by the business leaders serving on the community advisory council of the bureau. Council membership includes a wide range of professionals, such as banker, oil producer, telephone company executive, plant manager for a manufacturing firm, investment executive, and retailer. The final plan is usually reviewed by the president, who takes a special interest in fostering better relations between the university and the business community. Promotion of the program is the responsibility of the BCI. Preparations of the conference site and lun-

cheon are made by designated faculty. Student organizations assist in the registration and ushering of guests at the conference.

Several planning sessions of the conference are held both at the university and at the offices of the BCI. Participants of the conference pay a modest registration fee. All participants receive a copy of the proceedings of the conference, compiled by the bureau. The fee covers registration, a copy of the proceedings, and the luncheon.

The program begins with a welcome by the university president, followed by the introduction of guests by the director of the division of business. The first 20-30 minute speech, usually given by an economist, sets the framework for the key issues to be discussed at the conference. Business leaders from various backgrounds then speak on the problems and proposed solutions pertinent to their business. After the speakers' presentations comes a panel discussion. Prior to the conference, students and faculty members discuss the topic of the conference in class and are encouraged to ask questions of the panel. The conference concludes with a luncheon, featuring a keynote speaker of regional and national reputation.

The program offers a broad opportunity to improve business/university relations during the planning stage as well as at the conference. The reaction to the conference by the business leaders, faculty members, and students has been excellent, providing in-depth discussion of issues and a mechanism for interaction among the participants. The program began in 1980 and has significantly expanded each year in number of participants, recently reaching some 400.

The Streich Family Lecture on Free Enterprise, offered in the spring, corresponds to the economic conference. The lecture features a nationally prominent speaker discussing economic and business issues of the time.

The annual program is funded with an endowment provided by a local business leader and family. The purpose of the program is to provide a forum for a prominent individual in business and economics to discuss various aspects of the American economy. Speakers have included such notables as T. Boone Pickens, Jr. of Mesa Petroleum Co.; Dr. Lester C. Thurow of the Massachusetts Institute of Technology; Mr. Hobart Rowen of *The Washington Post*; and the

Honorable Paula Unruh, Principal Deputy Assistant Secretary of the U.S. Department of Commerce.

The Streich lecture is attended by approximately 500 faculty members, business leaders, and students. A reception is held for the guests, followed by a one-hour lecture. Streich family members, faculty members, administrators, and business leaders attend a dinner in honor of the speaker. Some speakers are also invited to address classes before the lecture.

A planning committee, chaired by the director of the Bureau of Business and Government Research, selects the speaker after informal consultation with the Streich family members and the administration. The invitation to the speaker is usually extended by the committee chairman or the president of the university. The planning committee is also responsible for the promotion of the program. The president's office often assists with arrangements for the dinner, attended by some twenty people and funded by the Streich Lecture Endowment.

The lecture offers an important opportunity to inform faculty members, students, and business leaders of the ideas and thoughts advanced by a nationally prominent individual on the U.S. economy. The programs have been carefully planned to provide a wide spectrum of economic thinking and issues. The success of the program enhances the probability of attracting other notable speakers at the national level.

5

Southwest Missouri State University

Seminars with Businesses and Industrial Firms

Marshall Gordon, President
Russell Keeling, Assistant to the President
Morris Norfleet, Consultant to the President

Institutional Setting

Southwest Missouri State University (SMSU) is Missouri's second-largest university and one of the major universities in the Midwest. The university is located in Springfield, the third-largest population center in Missouri, with a service area of 250,000. Supported by an industrial/manufacturing base and an expanding tourism industry, the community serves as a regional center for health and medical services for southwestern Missouri, northwestern Arkansas, southeastern Kansas, and northeastern Oklahoma.

SMSU was established in 1905 as Missouri State Normal School Fourth District to serve the higher education needs of the 24-county southwestern Missouri area. The school opened its first term in September 1906, with 173 students. In 1919 the college became known as Southwest Missouri State Teachers College, then Southwest Missouri State College in 1945. In 1972, SMSU was elevated to its present university status.

Today SMSU serves approximately 16,100 students from throughout Missouri, forty-one states, and thirty-six countries. SMSU offers over 100 undergraduate and graduate academic programs in thirty-nine departments. The academic offerings are housed in six colleges: arts and letters, business administration, education and psychology, health and applied science, and science and mathematics. The institution employs approximately 600 faculty members and 1,400 support personnel.

The mission of the university centers on teaching, research, and public service. In 1985 SMSU conferred nearly 2,100 degrees. Students attending SMSU mirror national trends by selecting career

and professionally oriented fields of study, supported by a strong background in the liberal arts.

The main campus encompasses more than 125 acres and contains over forty buildings. The campus includes nine classroom buildings, an extensive library, a multipurpose recreational center, an administrative building, a health center, a stadium, and six residence halls. Construction is currently underway on a new, state-of-the-art college of business administration building. SMSU also operates a two-year campus at West Plains, Missouri; the State Fruit Experiment Station at Mountain Grove, Missouri; Baker Observatory near Marshfield, Missouri; and an experimental farm in southwestern Springfield.

Four years ago the university initiated a comprehensive planning process and a restructuring of the administration. The planning process resulted in a focusing of university resources on four strategic areas: business, education, communications, and agriculture; and on seven integral academic areas: computer science, engineering technologies, environmental design, health, home economics, public affairs, and recreation.

The restructuring of the administration led to a system of shared governance and management. The president is assisted by five vice-presidents who oversee the following functional areas: finance, university advancement, student affairs, academic affairs, and administrative services. The office of planning and policy and the office of assistant to the president also provide support services.

SMSU has been instrumental in the growth and progress of Springfield and the state. The university is one of the largest employers in the city, with an annual economic impact of over $400 million on the local economy. The institution is a major supplier of employees to major corporations and businesses in the area and throughout the state. Within one year of graduation, over 93 percent of SMSU graduates were either employed in their chosen field or attending graduate school.

The Program

Two years ago, under the leadership and direction of its president, the university established the office of corporate relations for the mutual benefit of businesses and industries to promote economic development, create more learning experiences for stu-

dents, open doors for future employment, and focus faculty expertise on meeting specific needs in the region. A director of corporate relations was selected and various university services were coordinated under the office of corporate relations.

The office of corporate relations began a pilot program to strengthen the university's commitment of service to the region. As a major part of the program, SMSU initiated a number of seminars with businesses and industrial firms in the Springfield area. The first such seminar involved SMSU and Dayco, a major local industrial firm. The seminar consisted of dialogue on university-corporate relations in an effort to determine Dayco's needs and how the university could assist the corporation.

The seminar consisted of a one-day retreat involving a diverse group of Dayco and university personnel working together on problems of mutual interest. The result was a closer relationship between individuals and organizations that has led to other cooperative ventures.

The seminar opened with a dinner and an informal discussion on the evening prior to the formal seminar agenda. The seminar began with a discussion of similarities and concerns common to Dayco and the university. Subgroups were then formed to work independently and report back on important problems facing the corporation. The subgroups were asked to note ways in which the university could assist. After an initial report, the subgroups received feedback from the group and met again in the afternoon to clarify areas of mutual interest and develop a plan of future cooperation.

At the end of the seminar, final reports were presented and areas of cooperation were agreed on by Dayco and SMSU. Since the conclusion of the seminar, the various subgroups have continued to work independently to prepare proposals, plan strategies, identify resources, and determine costs for pursuing solutions to joint problems.

The success of the one-day seminar has led to an expanded role for SMSU in the business community. A guide listing the complete services available from the university has been prepared for businesses and government agencies. This guide has been widely distributed and has resulted in many new ventures between the university and the business community. As a result of the establish-

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ment of the office of corporate relations, the amount of research dollars received has grown from less than $400,000 to over $1.2 million. The university has also received numerous industry gifts of equipment, scholarships, and other financial contributions to support cooperative efforts.

The seminar program has continued to develop and evolve and has helped make Southwest Missouri State University a major force in the regional and state economy. The increasing cooperation between the university and the business community has contributed significantly to the growth and progress of SMSU.

Others who might want to develop seminars should bear in mind the following: the university administration must have clearly in mind the reasons for becoming involved and be able to commit the time and resources to accomplish the task; the president must be involved in the early stages of development of the partnership and be kept informed continuously; the university and corporation must realize the necessity for open dialogue and candid discussion; and the entire approach must be evaluated in terms of its contribution to the growth of the university and the corporation.

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Towson State University (MD)

University-Industry Luncheon Club

Hoke L. Smith, President
Dan McCarthy, Director, University Relations

Institutional Setting

Situated on 326 wooded acres just one-half mile beyond the northern periphery of Baltimore, Towson State University (TSU) is surrounded by one of the fastest-growing metropolitan areas in Maryland. Its location, including close proximity to Washington, DC, affords the university great opportunities for cooperative relationships with the corporate community.

Towson State celebrated its eleventh year as a university in July 1987. Upon reaching this anniversary, Towson had evolved from The Maryland State Normal School—the first state teacher training institute authorized by the Maryland General Assembly (in 1865)—to a comprehensive institution that offers the Bachelor of Arts, Science, and Fine Arts degrees, and master's program degrees (M.A., M.Ed., M.S., M.F.A.) in nineteen graduate programs. The undergraduate curriculum encompasses more than fifty majors and concentrations in twenty-nine academic departments.

In 1986-87, Towson enrolled 9,478 full-time undergraduates, 4,722 part-time undergraduates, and 1,210 graduate students. Its faculty now numbers over 450.

A 1982 restructuring of its academic programs has enhanced TSU's involvement in external relations. Originally separated into five (primarily undergraduate) divisions plus the graduate school and continuing education program, TSU's academic departments and degree programs now constitute eight colleges and schools. Six of these colleges—allied health sciences and physical education, education, liberal arts, fine arts and communication, natural and mathematical sciences, and business and economics—are administered by an academic dean. In addition, the college of continuing studies and the graduate school are separately headed by academic deans.

All university programs are administered under the president, provost, and vice presidents for student services, institutional advancement, and business and finance. The restructuring into six colleges and schools has encouraged college deans and some faculty members to seek external sources of support for their programs. They are assisted in their efforts by the greater visibility offered by their college's or school's separate status.

The Greater Baltimore Area contains well over half of the population of Maryland and a great variety of businesses and industries that serve as potential employers of Towson graduates and providers of external resources to the university. Baltimore's 13,500 businesses employ 13 percent of the city's workforce in manufacturing and another 30 percent in finance, insurance, and services. Major Baltimore employers include McCormick Corporation, Anchor Hocking, General Motors, Lever Brothers, Koppers, Allied Chemical, and Rockland Industries. In addition, Baltimore is the corporate

headquarters of Crown Central Petroleum and USF & G Corporation.

Baltimore County, of which the City of Towson is the seat, is home to almost 13,000 businesses. Of these, 303 employ more than 100 workers. The county's development varies widely, from urban centers and their suburbs in the immediate vicinity of Towson to East Baltimore to the more rural areas near the border with Pennsylvania.

In the past, Baltimore County was a manufacturing center. Today, only 17 percent of the county's employment is in manufacturing, mostly in durable goods. Light manufacturing and service-related industry and employment, however, have grown considerably in the last two decades, particularly in the Towson area. Major corporations employing several hundred or more persons in Baltimore County include AAI (research and development), Bethlehem Steel, McCormick Corporation, Noxell, Westinghouse, Bendix, Black and Decker, and Martin Marietta.

The Program

Since the 1980s, two types of corporate/college relations programs have been instituted at the university. Both the Towson State University-Industry Luncheon Club and the advisory boards to the school of business and economics, the college of natural and mathematical sciences, and the college of fine arts and communication have significantly increased the interaction of Towson administrators, faculty members, and students with representatives of local business and industry. They have also generated several new sources and types of support for the university.

The Towson State University-Industry Luncheon Club brings TSU faculty members, students, and administrators together with area business and industrial leaders for a monthly program in international affairs. The luncheon club provides a forum within which faculty members, students, and business officials can share with one another and invited policy experts their thoughts on international policy and economic issues of mutual concern.

Each meeting, attended by some fifty people, consists of preluncheon introductions and informal conversation among those attending, and a program featuring a speaker who is usually a leading figure from the diplomatic community at the policy-making level.

Speakers and topics address matters of particular importance to business and industry in Baltimore. Past speakers have included a special assistant to the undersecretary for economic affairs, U.S. Department of State; the ambassador of the Embassy of Egypt; the former deputy director of the International Monetary Fund; and the first secretary of the Embassy of Venezuela.

External participation in the meetings includes about twenty-five persons from area businesses of varying sizes and both local and national scope, and representatives of federal, Maryland, and Baltimore (public) agencies. Faculty and administration attendance is approximately 10-15 at each luncheon. including the university's president, vice president for finance, vice president for student services, vice president for institutional advancement, and deans and faculty members representing, in particular, business and economics, fine arts and communication, and liberal arts. Selection of approximately ten students to attend each luncheon is made by the participating faculty members and is based on achievement.

The structure of the Towson State University-Industry Luncheon Club is formed by a sustaining annual membership of business and industry officials, university administrators, and faculty. The luncheon club's regular membership includes twelve executives from the corporate community and 15-20 Towson faculty members and administrators who have either full-time or shared memberships in the organization. These actual luncheon club members represent about half the attendance at the monthly meetings. Although participation is limited to fifty persons at each luncheon, the rules governing attendance have been purposefully structured to maintain the opportunity for Towson students to attend as guests of the faculty and to allow the club's business and industry members to bring up to two guests each. This arrangement fosters involvement of a broad group of individuals in the club's activities over the course of one year.

A board of directors determines the financial responsibilities of members and advises the university on administration of the program, selection of speakers, and recruitment of new members. The board includes all business and industry members of the luncheon club, the president of the university, and selected administrators, faculty members, and deans.

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The Towson State University-Industry Luncheon Club grew out of an effort initiated by an individual faculty member in 1979. A professor of diplomatic history organized faculty members to meet at lunch with representatives of a major international corporation in Baltimore to discuss the Iranian political crisis prior to the fall of Mohammed Reza Shah Pahlavi. Several of the corporation's officials and employees had just returned from working in Iran and were concerned about the implications of the crisis for U.S. business interests in the Middle East.

The luncheon involved twenty-five people from Towson and the corporation. Officials of the corporation hosted the lunch and asked Towson State University to work with them to establish a formal series of luncheons to be held on a regular basis with an expanded group of participants.

To institute an on-going luncheon series, the faculty coordinator, representatives of the corporation, and the president of TSU agreed to establish a formal Towson State University-Industry Luncheon Club, with attendance of one-half academic community and one-half corporate community. A set of rules, a dues structure governing the participation of the corporate membership, and a fee structure for faculty and administration membership were developed, as well as plans to include students in the luncheons. A project coordinator was named to plan and organize the luncheon meetings. The luncheon club's board of directors was formed to oversee the regulations governing membership and to offer advice on the programs and other arrangements for the meetings.

The first year of the Towson State University-Industry Luncheon Club was limited to the participation of representatives of the university and the cofounding corporation. At the end of that year, business and industry membership was opened to individuals from additional corporations, and procedures for administering the luncheon club were established.

The project coordinator managed all aspects of the planning and administration of the luncheon club. His responsibilities included securing new members from business and industry, selecting speakers, scheduling the lunches and managing the attendance at each, and overseeing the logistics of the lunches themselves. He was assisted in these tasks by a secretary in the history department. As the Towson State University-Industry Luncheon Club became

more formalized and began to grow in size as well as reputation within the Baltimore business community, management of its organization and functions began to require the visible involvement of the university administration and the efforts of individuals in addition to the project coordinator.

Since 1983, the luncheon club has been managed by the assistant to the president with the assistance of other personnel in the president's office. The original project coordinator continues to obtain speakers for the program.

The enrollment of the club's annual membership; the facilities for the meetings; invitation and arrangements for speakers, members, and guest participants at each luncheon; and oversight of the luncheon service are provided by Towson State University. Executing the program requires two separate managements tasks: an annual effort to organize the club's membership and establish financial support for the luncheons, and a monthly effort throughout the fall and spring terms to arrange each luncheon meeting.

The corporate community membership provides its direct support of the luncheon club through payment, and oversight of the accounting of, the dues that underwrite the cost of the luncheon events. These funds are maintained in a restricted account of the Towson State University Foundation.

The work of securing the club's business and industry membership occurs in the summer and early fall of each year. The assistant to the president contacts business executives to request their initial or continued membership in the luncheon club and negotiates their financial contribution to the program based on a three-level corporate dues structure established by the board of directors the previous spring. Those individuals indicating an interest in joining the club are sent a formal invitation and admitted as members upon payment of their dues.

Dues for business and industry members range from less than $500 to $1,000 to help ensure membership representatives from businesses of varying sizes. These dues are most often paid directly by the corporations as charitable donations to the university. Individual faculty and administration memberships cost $70.00; a shared membership of $35.00 per person is an option.

Lunches at the university are held regularly on the second Tuesday of every month in October through December, and Febru-

ary through May. Organizing each meeting involves the preparation and mailing of formal invitations indicating the program for that meeting to each member, and telephone follow-up to establish the attendance of members and their guests. A roster of participants and a brief biography of the speaker is also prepared for each meeting.

The administrative effort carried by Towson State University for each meeting is estimated at forty hours of the time for the assistant to the president, twenty hours of the time for the administrative assistant to the president, and ten hours of secretarial time to prepare the invitations and other written materials.

Arrangements for the semiannual meetings of the board of directors require an additional administrative effort by Towson State University staff and officials. Organization of these meetings is handled by the assistant to the president in cooperation with the board chairman—an industry representative—and the president of Towson State University. The office of the assistant to the president assists in the preparation of the agenda and minutes of each meeting and is responsible for carrying out any decisions made at the meetings regarding membership, the dues structure, use of any leftover funds in the club's account, or other aspects of the luncheon programs.

The Towson State University-Industry Luncheon Club has yielded direct benefits to both the business and industry membership and the university community. Business and industry members gain the opportunity to expand their professional development and to receive information and diplomatic contacts that can serve their corporations. Attendance at the luncheon allows them to obtain important information about the current state of political affairs and to make the acquaintance of a country's ambassador to the United States.

The Towson State University-Industry Luncheon Club has significantly increased the visibility and reputation of the university in the Baltimore area corporate community. This increased visibility has facilitated the efforts of the university's development officers and deans to gain the attention and cooperation of area businesses and industries for support of programs in other areas of the university. Several of the deans of the university's colleges are able to make direct contact with corporate officials through their membership in the luncheon club.

The luncheon club has also provided direct benefits to TSU students and faculty. Unexpected moneys in the club's account have, in the past, been donated by the board of directors to the Towson State University Foundation and used for scholarships for students; forum speakers are encouraged to donate the minimal fee they receive for their presentations to a scholarship fund for students as well. The connection with the U. S. Department of State has led to high-level internships for TSU students there, and these internships are often supported in part by the speakers' donated honoraria. One of the past interns is now employed at the U.S. Department of State.

The access the luncheon club affords faculty members and deans to business and diplomatic officials has helped them improve their teaching and research and obtain internships and scholarships for their students. Invitations to luncheon meetings are prized by students for the opportunity it gives them, beyond discussion of the subject of the program, to gain advice on and interest of diplomatic and business officials in their career plans. Business and industry members have also made direct contributions to specific programs and areas of the university as a result of their participation in the luncheon club and their interaction with the university's administrators, faculty members, and students.

The Towson State University-Industry Luncheon Club is expected to keep its basic form well into the future. Whereas both external and university interest in the program has grown to the extent that membership could be expanded greatly, the board has decided to limit each meeting to approximately fifty persons to ensure highly interactive and focused discussions. The large effort that goes into planning each meeting, however, may eventually require changing administrative procedures or altering the yearly schedule of meetings.

The Towson State University-Industry Luncheon Club clearly exemplifies how a successful corporate/college relations program can develop from the special resources and initiative of one individual at a college or university. However, that initial idea must be supported by a campus administration that delegates primary responsibility for program initiatives to individual colleges, deans, and faculty members, and thus offers great flexibility in helping to define and support these efforts. The luncheon club continues to operate, effectively and with much respect from the Baltimore area

corporative community, because of the management support and active involvement of the university's administration.

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University of Wisconsin-Stevens Point

Paper Science Foundation

Philip R. Marshall, Chancellor
Donna Garr, Associate Vice Chancellor
Larry Graham, Chair, Paper Science Department

Institutional Setting

One of thirteen four-year institutions in the Wisconsin University System, the University of Wisconsin-Stevens Point (UWSP) is located in the center of the state, 110 miles north of Madison. Stevens Point is a city of about 25,000 residents, in a metropolitan area of approximately 58,000. The university first opened in fall 1894 as Stevens Point Normal School. In succeeding years, the normal school became Central State Teachers College (1926), Wisconsin State College (1951), Wisconsin State University-Stevens Point (1964), and finally, the University of Wisconsin-Stevens Point (1971).

As a unit of the state university system, UWSP is governed by a board of regents operating under the laws of the State of Wisconsin and is responsive to system administration under a president. Headed by a chancellor, UWSP administration is divided into four major units: student life, business affairs, and university relations, each headed by an assistant chancellor; and academic affairs, headed by a vice chancellor. These administrators make up the chancellor's cabinet, along with the deans and faculty representatives. UWSP is especially proud of its long-standing tradition of faculty govern-

ance involved in the decision-making processes of the institutions. Academic affairs consists of four academic colleges (letters and science, professional studies, fine arts, and natural resources), a graduate school, and degrees in forty-six undergraduate majors. In addition, the college of academic support programs and the continuing education office support and enhance the university's academic mission. These units are administered by six deans and a continuing education director.

UWSP offers an extensive array of academic programs served by over 400 faculty members recognized for excellence in teaching. The school has been perfecting its curriculum to meet current societal needs since it was established as a teacher-preparation institute in 1894. Home economics and education were early specialties. Since then, these curricula have expanded to prepare graduates for careers in fashion merchandising, nutrition, food sciences, dietetics, food service management, housing and interior design, education for the handicapped and the gifted and talented, library science, safety education, health, adaptive physical education, coaching, recreation, and physical education.

UWSP has a tradition of anticipating America's needs. About forty years ago, when some environmentalists talked about declining natural resources, UWSP was the first school in the country to implement a major in conservation education. From this beginning, its natural resources college has emerged as the largest of its kind in the Midwest. It has twenty-seven different environmental course areas, including fully accredited programs in forestry, wildlife, fisheries, environmental law enforcement, soils, water resources, outdoor recreation, and environmental education. Home to the nation's largest undergraduate program in natural resources, the campus reflects the environmental concerns of the 1,800 students in this field. Nearly two-thirds of the campus is a nature preserve with a thirty-acre, man-made lake. The surrounding grounds include a meadow, grasslands, wet prairie, and woods.

In recent years, UWSP has created such specialized majors as medical technology, communicative disorders, and engineering-based paper science. The campus received a multimillion-dollar federal grant to expand computing resources and expertise, and to aid in the development of a new major in computer information systems.

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A broad base of fine arts and liberal arts offerings forms the foundation for UWSP's professional programs. Consequently, UWSP has the largest liberal arts curriculum in the nonurban colleges and universities of Wisconsin. The breadth of instruction in such departments as geography/geology, psychology, English, political science, sociology/anthropology, foreign language, and philosophy is impressive. Few other universities besides UW-Stevens Point offer study in Chinese and Russian. The philosophy department's unusual concentrations include environmental philosophy, Russian-Indian-Native American-Chinese philosophy, business-environmental ethics, and religious studies.

The university is a major employer in central Wisconsin. University facilities are used year round for conferences, seminars, and institutes. Tourists are attracted to the Museum of Natural History, the mosaic mural on the Natural Resource Building, the Schmeeckle Reserve, and the Central Wisconsin Environmental Station. As a major conference center in the middle of the state, UWSP has stimulated other conferences to be held at area hotels and motels.

In the city of Stevens Point, once known as the "Gateway to the Pinery," many attractions relate directly to the community's major employers. The Sentryworld Sports Center has one of the finest facilities of its kind in the country for golf and year-round participation in tennis, racquetball, and squash. The nearby world headquarters of Sentry Insurance contains several art collections and a companion complex for visitors featuring a theater, shops, and a restaurant. The Point Beer brewery is about the sixth-smallest enterprise of its kind in the country.

Here in one of the nation's largest rural and small town settlements of Polish Americans, the *Gwiarzda Polarna* (Northern Star) is published weekly and distributed throughout the world to about 25,000 subscribers and newsstand customers. It has the largest circulation of all Polish language newspapers published outside Poland. Because the community has such a large segment of its population with family roots in Poland, Pope John Paul II came to the community in 1976 while serving as the Cardinal of Warsaw. The community's ethnic heritage is celebrated each summer during a "Polski Festywal" in which townspeople partake in spirited polka dancing, rich foods, Point Beer, and demonstrations of the crafts popularized in the motherland.

The Program

The UWSP Paper Science Foundation is intended to advance the study of pulp and paper science and engineering at the UWSP by encouraging students of high scholastic achievement and leadership potential to enroll in the program in paper science and engineering. The foundation provides financial assistance to these students with scholarships and grants; provides an opportunity for students to interact with interested leaders from the pulp and paper industry; furthers communication with the paper science faculty of the university in the development of the curriculum and assists it in undertaking new fields of instruction by providing technical advice and financial support; and furthers fundamental and applied research of importance to the pulp and paper and allied industries through special grants and fellowships.

Formed as a partnership between industry and the paper science department to ensure the continued success and excellence of the paper science and engineering program at UWSP, the foundation preserves the quality of students, faculty, curriculum, and facilities.

The foundation consists of approximately eighty member companies and organizations, each of which makes an annual contribution ranging from $100 to $6,000. Alumni and individuals may also make membership contributions to the foundation. The annual income of the foundation from dues and other sources exceeds $100,000. Approximately 15 percent of this is paid directly to highly qualified high school seniors. Equivalent financial awards are made to majors meeting high academic standards. Another 10 percent of the annual income is used to benefit all paper science majors by supporting student activities such as the student TAPPI chapter and travel to professional meetings. Another 15 percent supports faculty activities such as participation in professional organizations. Other expenditures include printing a high school recruiting brochure, purchase of equipment andd supplies, clerical/secretarial help, and faculty recognition awards.

Two annual foundation activities bring the corporate and university communities together. One is the foundation's annual meeting held on campus every September. The annual meeting includes a general business meeting, a board of directors meeting, and a banquet. The various foundation committees (academic advisory,

membership, nominating, etc.), the student TAPPI president, and the department chair report on the year's activities at the general business meeting. The board of directors conducts business, such as approving the budget for the next year's operations, at its meeting. Students, alumni, corporate representatives, and representatives of the larger university community honor the scholarship and award recipients at the banquet. This banquet provides an opportunity for corporate representatives to get acquainted with the various segments of the university community.

The foundation's academic advisory committee holds its annual meeting in April or May. During the morning session of this meeting, the committee hears and critiques presentations by graduating seniors on the results of their senior design projects. After a lunch, faculty and committee members meet to review and discuss the paper science and engineering curriculum. This meeting provides an opportunity for the corporate world to assess the status of the program and make recommendations for improving the quality of the program in paper science and engineering at UWSP.

The paper science department at UWSP was conceived by UWSP's chancellor. It was clear no educational program existed within the state to serve the needs of one of the state's most important industries. In 1967, the chemistry department was asked to create a "pulp and paper technology" program. In addition to developing course offerings, visits were made to many of the pulp, paper, and allied industry locations in Wisconsin. As a result of these contacts, an informal curricular advisory group of industry representatives was formed, donations for scholarship assistance solicited and received, and close ties formed with the local TAPPI section. By 1974, the program had officially become the paper science department and the faculty had increased from one to three.

In 1973-74, nineteen companies and organizations, based principally in Wisconsin, contributed $10,450 to the informal scholarship fund. Bylaws for the UWSP Paper Science Foundation were adopted in October 1974, and the foundation was incorporated as a nonprofit organization in the State of Wisconsin.

Day-to-day administration of foundation activities is handled within the paper science department; primary responsibility is held by the department chair. However, all faculty members are involved with various aspects of the foundation. Administrative activ-

ities are overseen by the foundation officers and board of directors. The foundation funds are held and invested by the university foundation, which is overseen by the university's director of development.

Over the years, the foundation has been active and vocal in its support of the paper science department. It was a major lobbying force in the effort to gain state support for a $2.1-million building addition for the program. The foundation conducted a successful $50,000 fund drive for the support of a computer laboratory. It was instrumental in securing an additional faculty position from the university for the department. It has initiated an endowment campaign to provide an income base for the future of the scholarship program. The foundation provides an opportunity for the corporate world to work with the university to ensure that well-qualified and highly motivated students will continue to seek opportunities within the industries served by the paper science department.

Faculty members are aided by the efforts of the foundation. Two hundred and forty students benefit either directly through financial aid or indirectly by contributions to the quality of their educational experience. About 200-300 people attend the annual meeting and 30-40 industry representatives participate actively on the academic advisory committee.

The foundation has contributed and will continue to contribute to the paper science and engineering program at UWSP by aiding in the recruitment and retention of well-qualified students, the development and retention of well-qualified faculty, the improvement of equipment and facilities, and the continued development of a relevant curriculum.

This partnership could only exist, however, where the manpower needs of an industry are being met by an educational program specifically tailored to serve that industry. This corporate-university interaction is clearly a symbiotic relationship.

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Western Connecticut State University

Ancell School of Business

Stephen Feldman, President
Ruth M. Corbett, Associate Director of Research and Grants

Institutional Setting

Western Connecticut State University (WCSU) is located in Danbury, Connecticut, in northwestern Fairfield County, adjacent to the New York State border. The university enrolls 6,000 students. Although WCSU serves the entire State of Connecticut, 84 percent of the full-time students live within a thirty-mile radius of the campus. By virtue of its proximity to New York State, the university also has large numbers of students from Putnam and northern Westchester counties, which are geographically unserved by any other higher education institution in the region.

"WestConn" (as the University is widely called) is organized into three schools: arts and sciences, professional studies, and business. WestConn offers forty undergraduate majors, forty minors and concentrations; master's degrees in education, business and public administration, English, history, mathematics, and oceanography/limnology; and, effective September 1987, an MBA degree.

Evolving from a two-year teacher-training institution and later a four-year state teachers' college, the institution has developed into a broad-based multipurpose institution, with strong business, professional, and liberal arts offerings. In 1965 a graduate program was established, and in 1967, the college was renamed Western Connecticut State College.

The most recent—and ultimately most profound—change in WestConn's continuing development is implementation of university status, which occurred as part of the reorganization of higher education in Connecticut on March 1, 1983. WestConn is now one of four comprehensive state universities, collectively known as The

Connecticut State University, governed as a single entity by a board of trustees. The trustees report organizationally to the board of governors of the department of higher education of the State of Connecticut.

As of 1986-87, the full-time faculty numbers 182 and part-time faculty 181. Part-time faculty members contribute to the university's academic programs through their on-the-job experience in a variety of professional fields.

WestConn enrolls nearly 6,000 students, of whom 3,020 are full-time undergraduates, 1,743 are part-time undergraduates, and 1,026 graduate students. The percentage of students concentrating in major undergraduate programs by school are 57 percent in arts and sciences, 14 percent in professional studies; and 29 percent in business. Twenty-five percent of the full-time undergraduates hold full or part-time jobs or participate in the university's cooperative education work-study program. A follow-up study by the career development center of a recent graduating class found that 70 percent went on to full-time employment, and the remainder went to graduate school, joined the military, were still seeking employment, or were working part-time. Of those employed, most continue to live and work in Connecticut.

Most WestConn students are the first among their families ever to go to college. WestConn is, for many of them, their only access to higher education. Two-thirds of the full-time students come directly from high school. A number of special populations, including minorities, new immigrants, the elderly, full-time employed teachers, and international students, study at WestConn. Special counseling and other activities are offered for these nontraditional students and special populations.

In addition to program and organizational changes in the past decade, WestConn's physical facilities have undergone extensive expansion and renovation. The university has grown from a 24-acre campus in downtown Danbury to a two-campus institution four years ago. In 1982, a 313-acre campus on Danbury's west side opened with the completion of an 87,000 square foot classroom building, which houses the school of business.

The Danbury region itself has undergone rapid population growth in the past decade, resulting largely from the influx of major corporations such as Union Carbide, Boehringer-Ingelheim, Per-

kin-Elmer, Ethan Allen, Grolier Publishing Company, and many other corporations attracted to Connecticut's favorable tax structure and accessibility to New York State. When Union Carbide moved to Danbury in 1981, its buildings contained more square footage of office space than all other companies and organizations in Danbury combined. The new Danbury Fair Shopping Mall, the largest mall in New England, opened in October 1986. Its four anchor stores and some 200 smaller stores are already providing employment to thousands of area residents.

Although Fairfield County, in which Danbury is located, has an extremely low unemployment rate, there is still a tremendous need for skilled workers and managerial employees in the region. WestConn is working closely with area corporations and public sector employers to meet their training needs through a variety of ways, including a cooperative education program. In 1986, 300 upperclass students were employed as coop students in 150 businesses and public-sector organizations.

The Program

In 1980, the university's school of business was endowed and became the Ancell School of Business. During 1979 the president and dean of the business school began a series of discussions with Nathan S. Ancell, chairman of the board of directors of Ethan Allen, Inc. Ethan Allen's corporate headquarters is on Lake Avenue in Danbury, one mile from the university's new 313-acre campus.

After nearly a year of discussion, a $500,000 endowment was awarded to WestConn by Mr. Ancell at a ceremony presided over by then Governor Ella Grasso. An additional $100,000 was presented to the university by the company itself as the first gift in a capital campaign, headed by Mr. Ancell, to raise additional funds for the school of business from area corporations. With this endowment, the business school was formally named the Ancell School of Business.

The Ethan Allen Company, under the leadership of Mr. Ancell, instituted a unique approach to the support of higher education through its generous support of its local public university. This approach is both relevant and effective in terms of the needs of business, education, and, ultimately, society. Ethan Allen endowed the

business school not only with financial support to achieve its programmatic objectives, but even more important in the long run, the business school has also been endowed with Mr. Ancell's lifelong philosophy that "profits, prosperity and social responsibility" go hand in hand by creating the proper environment for the production of wealth for all segments of society.

Further, this endowment was the first private endowment of a public higher education institution in Connecticut. Although support of public education by private philanthropy is becoming more widespread in many parts of the country, in 1980, it was relatively uncommon.

Nathan S. Ancell's creative departure from traditional support to higher education provided the Ancell School of Business with a margin of excellence enabling it not only to recruit outstanding faculty and students, but to provide graduate fellowships, implement an honors program, build its program offerings, and to improve academic facilities.

The Ancell School of Business has been endowed not only with financial support, but with the philosophy of its founder. Its students are educated both in the use of sophisticated business techniques and in the value of ethical behavior. Mr. Ancell and the school of business have entered into a partnership based on the philosophy that the transition from the academic world to the world of work should represent a continuum—not a discontinuity—between the ideals of the "ivory tower" and the pragmatic environment of industry. There is, and should be, an interaction between theories taught in academic institutions and the implementation of these theories in the market place.

The Ancell School of Business is administered by a dean who reports to the president of the university through the vice president for academic affairs. The six departments, administered by chairpersons, are accounting, finance, marketing, management, information systems, and justice and law administration.

The endowment of the Ancell School of Business has benefited WestConn in a major way: it was the cornerstone of a capital campaign that motivated other leaders of the community to support the university.

In 1981, an endowment to establish the Robert S. Young Business Library increased the university's fundraising to $1 million in

private contributions. The donation to the Ancell School of Business was made by the Young family of Danbury, Connecticut, in memory of Robert Young, who died in April 1980. Young, who was forty-one and president of Fairfield Processing Corporation, was a native of Danbury and active in the community. The donation by the Young family enabled Western's business library to duplicate the 4,000-item core collection of books and periodicals housed in the Baker Library of the Harvard University School of Business. The Young Library is equipped with a computer terminal on line to the Ohio College Library Consortium, which joins more than 2,000 libraries in the United States, Canada, and other countries. It is also connected by computer terminals to the Lockheed Corporation's Dialog system, which allows readers access to articles in a broad range of periodicals.

In August 1981, the Perkin-Elmer Corporation announced a donation of more than $300,000 in equipment, software, and technology to establish the Perkin-Elmer Computer Center at WestConn. The computer hardware is in operation in the school of business but is available to all university faculty members and students for research. The Perkin-Elmer Computer Center is the finest academic computer installation in the region and is an excellent example of the business and academic community working together to service the region's academic needs.

The WestConn 100 Society was founded in 1981 for the purpose of involving small area businesses in the fortunes of the institution. For an annual fee of $100, an individual or a business can become a supporter of the university. In return, these individuals and organizational representatives are invited to functions at the university, including theatrical productions, special luncheons, and a wide variety of other activities. The support from WestConn 100 members, which now number 275, is not just financial. Intangible support cannot be measured precisely, but their involvement in the life of an academic institution results in recruitment successes, support for fund-raising activities, athletic events, good will in the community—and perhaps most importantly, an increase in the understanding of the university's mission and role by the business community.

The university is constantly evaluating its mission and academic programs in an effort to strengthen the curriculum, advance fac-

ulty development, and improve its physical resources. The university is devoting a great deal of attention to expanding graduate opportunities. Recently a concentration in health care administration was added to the graduate fields of study in the Ancell School.

The partnership between the university and business is an example of a highly successful and mutually beneficial collaboration. Conditions in the greater Danbury area are particularly favorable because of various economic, social, and demographic considerations. However, it took imagination, energy, and dedication to take a good business program and virtually overnight turn it into one of the finest schools of business at a public higher education institution.

Other institutions wishing to follow a path similar to WCSU's should first carefully evaluate the economic, social, and educational conditions of their region; establish an on-going dialogue with concerned leaders of the business community; and seek ways in which the institution can, within the framework of its own mission and objectives, assist business and industry in meeting their training and employment needs. Leaders of the business community should be involved in institutional activities: areas in which collaboration will serve mutual interests will soon become evident. Academic institutions should promote student employment through cooperative education and other work programs, which provide advance training to students and a large recruiting pool for area corporations.

Any projects in which business and university leaders meet to discuss problems of mutual concern will eventually bring to light new ways in which collaboration will succeed.

9

Western Kentucky University

Corporate Roundtable

Samuel Kern Alexander, Jr., President
John W. Sweeney, Director of Development

Institutional Setting

In 1906 the Kentucky General Assembly enacted legislation establishing the Western Kentucky State Normal School, a two-year institution. In 1922, the school became a four-year institution known as the Western Kentucky State Normal School and Teachers College, awarding its first degrees in 1924. In 1930, the Kentucky General Assembly removed "Normal School" from the title, making it Western Kentucky State Teachers College. In 1931, the institution began offering the Master of Arts degree. In 1948, the Kentucky General Assembly removed "Teachers" from the name, thus making it the Western Kentucky State College. In June 1966, the institution achieved university status and thus became Western Kentucky University (WKU). The colleges now constituting WKU are arts, humanities and social sciences; business administration; education and behavioral sciences; science, technology and health; and the graduate college.

Since its formation, WKU's seven presidents have all striven to make the University a highly respected center of learning where qualified students may receive general and specialized higher education at the undergraduate and graduate levels. Today, Western Kentucky University proudly serves the educational needs of thousands of students from Kentucky and its neighboring states. Western offers a broad spectrum of educational programs in an academic climate intended to promote liberal education, democratic citizenship, character development, and the pursuit of excellence.

WKU provides areas of study that prepare some 13,000 students and 35,000 alumni for careers in the arts and sciences, education, government service, business, industry, health, agriculture,

and similar fields. It also offers special professional and preprofessional curricula to prepare students for further professional training or for technical careers. Emphasis is given to research related to regional and state needs. Such research may grow out of an academic specialization or may be conducted in cooperation with units of government, business, industry, and education. The university's program of public service includes on-campus and field-based activities, technical services, workshops, seminars, cultural experiences, and opportunities for adult and continuing education.

WKU's undergraduate division provides four-year programs leading to the Bachelors of Arts, the Bachelor of Fine Arts, the Bachelor of Science, the Bachelor of Science in Nursing and the Bachelor of Music degrees. Eighty-two academic majors and fifty-nine academic minors are available. Professional and preprofessional curricula provide additional options. Twenty-eight associate degree programs lead to the Associate of Arts, Associate of Science, and Associate of Liberal Studies. Two certificate programs are also offered.

The graduate college offers the Master of Arts, Master of Arts in Education, Master of Business Administration, Master of Science, Master of Music, and Master of Public Service. WKU also offers the specialist degree and Rank I and II programs. A joint doctoral degree program is offered with the University of Kentucky, and a cooperative doctoral program is offered with the University of Louisville.

Located on a hill overlooking the city of Bowling Green, the WKU campus is acclaimed as one of the most beautiful in the nation. The portion of the campus known as College Heights commands an impressive view of the Barren River Valley and is a distinctive landmark of the city. There are sixty-six major buildings on the approximately 200-acre main campus, with another 785 acres on the university farm.

Bowling Green has a population of 50,000 and is located approximately 110 miles south of Louisville and sixty-five miles north of Nashville, Tennessee. The hub of south-central Kentucky, the city serves as the area's center for education, employment, health care, industrial services, transportation, distribution, and retail-wholesale shopping. There are some 225,000 people in the trade area.

9

In recent years, a large number of nationally known manufacturing firms have chosen Warren County for new and expanded facilities and for corporate headquarters. These new businesses and industries have greatly expanded the area's diversified economic base. More than 8,000 new industrial jobs have been created by manufacturers in the past twenty-two years.

Realistic economic industrial development, initiated by the Bowling Green-Warren County Industrial Foundation and the chamber of commerce, has resulted in a diversified economic base for an area which only a few years ago almost entirely depended on agriculture. This same leadership works continually to attract business and industry to further strengthen the area's economy. Recently, General Motors, NHK-Associated Spring Suspension Components, and Sumitomo Wiring Systems, Ltd. have located in the Bowling Green area.

The Program

A key element in WKU's corporate/college relations program is the Corporate Roundtable. WKU's purpose in establishing formal corporate/university activities is to create a dialogue with key corporate personnel in the community and surrounding areas in Kentucky. These activities build bridges with business and industry in order to promote better understanding of institutional activities, generate corporate input, provide employment opportunities for graduates, initiate faculty consulting services, and create corporate giving opportunities.

Two major forces have accelerated the need for cooperation between Western Kentucky University and industry. First, ever-increasing costs of higher education have compelled education leaders to seek financial support through corporate enterprises. Second, the basic transition from an industrial economy to an information/knowledge-based economy has forced industrial leaders to look to higher education in their search for knowledge and talent.

The university's mission includes research and service. Commitment to cooperation with corporations is clearly delineated in the university's development plan. The idea of the Corporate Roundtable was formulated at the onset of the development program in late 1980. When the development program was initiated in 1980, a plan of development was drafted at the request of the uni-

versity president; the plan included a major section devoted to corporate cultivation and potential fund-raising opportunities. Because the university did not sponsor any major or formal corporate development thrust at that time, the office of development proposed seven initiatives, one of which was the following: "That a program of corporate roundtable meetings between the President or other selected university representatives and chief executive officers of major corporations in Kentucky be conducted regularly to discuss the university's mission, promote its key strengths, cultivate bonds of mutual interest, and solicit financial support."

Because the office of development was a two-person staff at that time (a director and a secretary), it was arranged for the director of community affairs to assist in the planning and negotiations with corporate "sponsors" in selected Kentucky cities in order to activate the corporate roundtable program.

With limited funds for cultivation activities per se, it was necessary for the community affairs director to identify a corporate sponsor who would be willing to act as host for a roundtable session. Targeting Bowling Green as a pilot city, a local banker was enlisted to serve in this capacity. He agreed to help identify, and host at a roundtable, 20-30 top corporate officers in the community.

Following the pilot roundtable in Bowling Green, similar programs were arranged in Franklin, Owensboro, Russellville, Paducah, Glasgow, and Elizabethtown. Each roundtable was sponsored and funded by a local host. Approximately 20-30 corporate and business leaders were invited to participate in each. At each meeting, the president of the university and key corporate officers began to generate mutually beneficial and productive conversations.

The Corporate Roundtable concept, involving the president of the university as the prime institutional resource person, continued for a year and then evolved into a broader context. At that time the president felt that in order to maintain the impact and effectiveness of the program, it would be useful to phase out the concept of the primary resource person in order to phase in the participation of others at the university; thus, the faculty team concept was originated. As a result, five faculty members representing key departments that interface regularly with business and industry were appointed corporate roundtable representatives. The five-member

team was headed by the dean of the graduate college. The interactive areas are finance and management systems; sociology, anthropology, and social work; industrial and engineering technology; psychology; and communication and theater.

This team was scheduled to conduct corporate roundtables in the same communities the president visited during the first phase of the corporate awareness and cultivation endeavor. Subsequently, additional communities have been added to the originally targeted Kentucky areas. The goal and primary objective of the team-oriented corporate roundtables is to build bridges of trust, communication, and interaction by stressing WKU's faculty and staff roles in enhancing corporate welfare in Kentucky and elsewhere.

Establishment of effective university-corporate partnerships requires exploration of the university's many resources and services and of the specific needs of local corporate enterprises. Faculty teams representing specified areas of expertise meet with Corporate Roundtable groups as well as with groups representing other segments of society. Expected outcomes of meetings between the faculty teams and the organizational representatives include requests for services resulting in opportunities for individual faculty consulting, graduate assistantship support, and contractual research/services.

Faculty members representing an area of expertise and wanting to form a team develop an inventory of services to be considered for presentation to corporate personnel. After the proposed services have been approved by the respective department head(s), college dean(s), and vice president, the information is forwarded to the development office and community affairs office.

Personnel in the development office maintain a list of corporate prospects, act as a clearinghouse for information on corporate support, and keep records of faculty-team/corporate activities. A staff member from the community affairs office is designated to work in the corporate area in coordination with the development office. This person is responsible for scheduling meetings of faculty teams with corporate personnel and serves as a conveyer of corporate requests for services to appropriate university offices/individuals.

Costs of services are paid by the corporation. Renumeration may take the form of consulting fees to individual faculty members

or of contractual payment to the university, depending on the nature of the requests and services to be performed.

The Corporate Roundtable is administered by the office of development at the university under the direction of the director of development, who is assisted by the director of community affairs. Although the director of development created the concept, initiates broad strategy, formulates local tactics, and recommends communities to be targeted, both he and the director of community affairs share responsibility for operational details involved in conducting the roundtables. The dean of the graduate college is also involved in the roundtable program. His office works with faculty team members in academic, research, and consulting activities that may emerge as a result of faculty-corporate linkage generated by the roundtables. Ultimately, the director of development has final authority over all aspects of the program, together with the executive vice president for administrative affairs.

Approximately 5 percent of development office staff time is devoted to this program—a relatively modest expenditure considering the potential impact on institutional/corporate relations. As a result, there has been no need to hire additional staff to help administer the program. In many cases, the volunteer corporate hosts assume a considerable amount of the responsibility in creating the invitation lists, writing letters of invitation, making personal calls, overseeing meeting arrangements, and preparing the general agendas.

The corporate hosts pay for all meeting expenses with the exception of faculty team travel; thus the program involves modest costs to the university. These funds that are necessary come from the development office budget.

To further explore cooperative ventures with Bowling Green industries, the university formed the Western Kentucky University Corporate Council in late 1984. This was an outgrowth of the roundtable program. The council consists of representatives from ten corporations in the Western Kentucky University area, including the Union Underwear Company, Inc., ARCO Metals in Franklin, Camping World, and Humana. Its purpose is "to build bridges with corporations—to form a linkage and a dialogue with them."

10

Western Oregon State College

Oregon Business Week

Richard S. Meyers, President
George Wyatt, Chair, Department of Business
Judy Niesslein, Director, Public Information

Institutional Setting

Western Oregon State College (WOSC) is the oldest liberal arts college in the Oregon State System of Higher Education, offering twenty-three undergraduate and graduate degree programs through its two schools: education, and liberal arts and sciences. On a campus of 122 acres, WOSC provides more than 3,800 students with all the benefits of a small college—small classes, personal attention, and friendly people.

The college is nestled in the heartland of Oregon's fertile Willamette Valley in the community of Monmouth, population 5,500. It is twenty minutes from the state capital of Salem and midway between the state's two largest cities, Portland to the north and Eugene to the south.

The academic year is divided into three quarters and a six-week summer session. The college is accredited by six professional accrediting associations, including the Northwest Association of Schools and Colleges and the American Association of Colleges for Teacher Education.

The Program

Oregon Business Week was established in 1980. Western Oregon State College (WOSC) joined with Associated Oregon Industries, the Oregon Council on Economic Equation, the Oregon Department of Education, and the state chambers of commerce to offer Oregon high school students and their teachers an opportunity to study business. Students and teachers were invited to spend one week on the WOSC campus in Monmouth.

The OBW program is a unique one-week program designed to give the state's high school students and teachers innovative exposure to the American enterprise system and to the role of business in the economy. There are three distinct elements that characterize Oregon Business Week:

1. OBW provides an opportunity for business executives to improve teachers' understanding of the private enterprise system and its relationship to the preservation of individual freedoms.

2. OBW provides the opportunity to future leaders—students—to learn about the American enterprise system.

3. OBW is designed to enhance the continuity of the American enterprise system, which helps ensure our basic freedoms.

Western Oregon State College has been identified as the educational base for Oregon Business Week during the past six years. The college has made a significant contribution to the program in terms of facilities and support services. The chair of the division of business and economics has been the administrator of the program with particular responsibility for curriculum development and speaker recruitment. Maintaining quality control within the program is the responsibility of WOSC.

Oregon's business community provides participating students and teachers with a $175 scholarship for board and room expenses while they attend OBW. Contributions to support OBW have increased from about $40,000 in 1980 to over $210,000 in 1987.

Business support extends far beyond donations for scholarships, however. In 1986, 210 business executives from around the state came to Monmouth to share their business knowledge and experience. Another thirty-eight businesspeople spent an entire week working with students and teachers as group leaders. Their responsibility was to help participants understand and to interpret formal presentations.

The framework of the OBW program provides important interaction among students, teachers, and business leaders and contributes to the strength of the Oregon Business Week experience.

Now in its eighth year, OBW '87 reached 600 students and 150 high school teachers in Oregon. Participants review the facts on business operations and the American private enterprise system. The counselors, discussion leaders, and teachers for this program are prominent people knowledgeable about every aspect of busi-

ness, sharing their knowledge with students and teachers and addressing the major problems of private enterprise in candid, informal ways.

Students and teachers learn about private enterprise; the economic system; Oregon's economy; business operations; corporations; relationships of business to labor, government, and the public; selected critical problems of business; professional management; and careers in business.

The OBW curriculum is carefully planned to provide student and teacher participants with a healthy exposure to business basics and to the essential attitude that in America the business of business is business.

Hundreds of Oregon's young people have benefited from their Oregon Business Week experience. Their attitude and their level of understanding have been significantly improved by OBW.

Many teachers from all regions of the state have gained a better understanding of the American economic system and the role of business in that system. They share this enhanced knowledge with all of their students on a regular and continuing basis.

Part 2

Curriculum and Instruction

11

Auburn University of Montgomery (AL)

The Monsanto Agricultural Company Quality of Work Life Program

James O. Williams, Chancellor
Nicholas Gerogiannis, Director, Center for International Studies

Institutional Setting

Auburn University at Montgomery (AUM) was established by the Alabama Legislature in 1967 in response to citizens' requests for a degree-granting institution for Montgomery area residents.

AUM is governed by a board of trustees consisting of the state superintendent of education, one member from each congressional district in the state, and an additional member from Montgomery's congressional district; the governor serves as chairman. All university programs are supervised by an administrative council, which includes the president of Auburn University; the chancellor of AUM; the vice-chancellors for student affairs, research and development, academic affairs, and finance; the deans of the academic schools; the deans of the library and the school of continuing education; the director of university relations, the president of the faculty council; and the director of the physical plant.

Academically, AUM is organized into six schools and one extension division: liberal arts, sciences, education, business, nursing, the air university graduate program (operated at Maxwell Air Force Base in Montgomery), and the school of continuing education, serving Montgomery's adult community through conferences, professional development seminars, and noncredit courses.

During fall 1986, AUM enrolled 5,283 students: 3,490 full-time undergraduates, 824 part-time undergraduates, and 511 graduate students. AUM's faculty now consists of 188 full-time faculty, 120 part-time faculty, and 437 staff members. AUM offers a Bachelor of Arts and a Bachelor of Science in forty majors for undergraduate

students, and master's degrees in more than thirty graduate programs.

Located along the banks of the Alabama River in the central portion of the state and within a 600-mile radius of one-third of the nation's population, Montgomery is a city of rare and diverse economic opportunities. As the home of state and regional government, two military bases, wholesale and retail trade, agricultural support, and industry, Montgomery provides a well-balanced economic environment for AUM students and graduates. With a population of more than 186,000 people, it is Alabama's fastest-growing urban area. The local economy is largely service oriented, with more than 117,000 people working in nonagricultural areas. Manufacturing industries employ 15 percent of this group, while another 74 percent are in wholesale and retail trade, government, financial services, and other services. Metropolitan Montgomery has more than 1,200 businesses and industries that are potential employers of AUM graduates. Major employers in Montgomery include Brockway Glass, National Industries, and Union Camp Corporation. Additionally, Montgomery is the national headquarters of many large companies, including Durr-Fillauer Medical, Inc., KinderCare, and Blount, Inc.

The Programs

AUM has had a number of corporate/college relations programs over the years. Among these are the collaboration of the school of continuing education and the Center for Business and Economic Development (CBED) with the Alabama Electric Cooperative to provide a series of professional development training programs for managers. Additional training agreements were developed with the Alabama Farm Bureau Federation and General Electric. Faculty members consult with numerous business enterprises, most frequently with Blount International, Ltd., an international construction company.

AUM's relationship with the Monsanto Agricultural Company (Anniston, Alabama) is an outstanding example of the university's corporate/college programs. This program allows the university's Center for Business and Economic Development to provide professional services to assist the management of Monsanto-Anniston to develop a "Quality of Work Life Program" (QWL). CBED has pro-

vided consultation and intervention on team building and organizational development to the top three levels of management in the company.

The key elements of team building were identified to be problem diagnosis and problem solving. Workshops were designed in which CBED facilitators would assist the company's top three levels of managers to properly identify problems, set priorities for problemsolving, diagnose problems, and set plans of action. The "plan of action" was to result in operational programs for improved productivity in the plant and for an increase in employee participation in plant management, and in increased employee work satisfaction.

The program consisted of several stages. The first called for staff members of CBED to interview each member of the company's top management to gather data on current working relationships between the members of the top management group, their expectations of a QWL program, and their general impressions of the current effectiveness of the organization's structure. Using a standardized questionnaire, members of the CBED team compiled this information, analyzed it, then met with the company's top management group to discuss their findings. This discussion identified the specific issues important to developing a QWL program for the company. After CBED conducted objective, unhindered interviews with the key managers in the organization, the topics to be addressed and the plan of action for implementing team building and organizational development principles were then established jointly between CBED and the company's management.

During the second phase of the program, the CBED staff accompanied the company's top management (the plant manager and the superintendents) to an off-site retreat at a nearby state park conference center. This retreat, lasting two days, was for determining a cohesive management philosophy and establishing a definitive direction for the company. The goals, objectives, and plans for implementing the philosophy and for guiding the direction of the company were written for each division of the company. Further, some topics concerning interpersonal relations and conflict resolution were discussed at this retreat.

Eight weeks later, the CBED staff conducted a second off-site retreat. This one included the company's second-level managers

(supervisors) and lasted a day and a half. Four weeks after the second retreat, a third off-site retreat was held for the third-level managers (foremen and others), again for one and one-half days. Prior to each of these retreats, the same interview process used with the top management was followed for each individual participating in the retreats. These subsequent retreats included a half day for each group to meet with the next-highest management group to share concerns and discuss issues. So, at the second retreat, after their own session, the supervisors met with the superintendents; then at the third retreat, the foremen met with the supervisors. CBED facilitators were present at every meeting.

After each of these retreats, the CBED principal investigator served as a consultant to the company to assist the managers in following up on issues covered at the retreats. During his periodic visits to the Anniston plant, the principal investigator met with managers and employees from throughout the plant. Also, he successfully coordinated the CBED's QWL program for the company with the plant's union representatives. This process called for interviews with the top union representatives in the company and brainstorming sessions with them on union-management relations.

On almost a weekly basis following these initial phases, the principal investigator continued to travel to the Monsanto-Anniston plant to serve as a consultant to the company. Therefore, the first efforts were not lost in a haze of good intentions; there was a continuous effort made by the principal investigator and the company's management to carry out the program that had been mutually established.

The director of the university's Center for Government and Public Affairs (CGPA) was the first project director, but after a long-term contract was signed, a full-time project director was employed. CBED employees served as the supporting staff. The project benefited AUM group members by giving them valuable experience working with a major company on a long-term, complicated, and ambitious program. Previously, CBED was usually involved with organizations in the public sector (state and federal government).

At the company, the project directly affected the plant manager, the six plant superintendents, the supervisors, and the foremen; indirectly, of course, it affected each employee at the plant. Specifi-

cally, the QWL intervention allowed the company's top management to bring issues and problems into the open; to determine the magnitude and potency of problems; to provide to the plant manager and his staff a state of the lower managers' attitudes and concerns; to collect information on employee needs, problems, and frustrations in some organized manner so that corrective actions could be taken in orderly fashion; to understand better their subordinates' feelings and attitudes, and to investigate better methods of communications within their own specialized areas; to make clear to everyone in the company that the top management was attempting to improve working relationships; to establish mechanisms by which all members of each management group could feel that their individual needs were being noticed; and to provide additional mechanisms for supervisors and foremen to influence the whole organization.

Generally, the QWL program encouraged cohesion among management groups at the company. Furthermore, as a result of these efforts, the top management has been better able to address its current and future objectives, including the institution of a quality control program that has increased overall efficiency and productivity. This, in turn, has attracted additional support from the company's headquarters in the form of resources for further research and development and capital outlay. The company was charged with the task of producing a chemical line for the parent company, and it experienced its first smooth turn-around of product changes during a retooling period. The company's headquarters has attributed these improvements to the company's aggressive QWL program.

The Monsanto-Anniston QWL program began in February 1984 and officially concluded in May 1986, the duration of the university's contract with the company. The plant is now in transition; therefore, the continuing efforts for this program are being provided through an individual consulting contract. This is to help ensure a smooth transition.

Prior to this program, Monsanto and AUM had no association. The company solicited the university's proposal based on the reputation of the CGPA and the CBED and on the quality of the AUM team during preliminary negotiations. Most important, and characteristically of an AUM center, the negotiators did not attempt to

present the company with a preconceived program. The QWL program AUM prepared for Monsanto was tailored to this specific company's needs which were identified through careful interviewing and observation. These preliminary efforts led smoothly into the phases of the program described above; so, the negotiations were, in fact, part of the program even though no contract had yet been signed. This process created a working relationship based on mutual trust and respect that continues even now, after the contract has expired.

At AUM, the vice chancellor for research and development sometimes takes an active role in a corporate/college program. However, the administration of the program is always conducted by the director of the contracting center. The project director has final authority in any matter pertaining solely with the project, as long as that authority does not influence university security or policy. The chancellor always retains final authority over all external relations. The center directors meet regularly with the vice chancellor and the chancellor to brief them on projects. Expenditures must be approved by the chancellor. Of course, for the on-going work at Monsanto-Anniston, the principal investigator had complete control.

The AUM-Monsanto QWL program has significantly benefited the university. First, this corporate/college relationship provided the university's CBED with an opportunity to work in the private sector on a long-term project not primarily related to professional development. This intervention/consulting program allowed the principal investigator to conduct valuable on-site research; a refereed publication resulted from this research. Furthermore, there have been some valuable secondary benefits. Material and experiences gathered during the Monsanto QWL program, some of which resulted in case studies, were used in several courses at AUM. Finally, in summer 1986, the Monsanto-Anniston Plant Manager recommended to the top management of the Monsanto Chemical Company (Pensacola, Florida) that the company retain the AUM Center for Business and Economic Development to direct a QWL program for the Pensacola plant. A proposal, similar to that for the Anniston project, is under consideration.

AUM's experiences suggest the following advice:

- Other institutions wishing to start similar corporate/college

programs must understand the private sector's expectations and needs. Companies do not want preconceived approaches and theoretical programs. The applications of any intervention, consulting, or training must be made clear; otherwise the company will have little faith in the academic consultants.

- Academic institutions must analyze the nature of each individual company. A company wants to be treated as a unique entity.
- The institution must recognize that company managers appreciate specificity and expect measurable results.
- It is necessary to ensure frequent and meaningful interaction between the university and the company at all stages of the program.

12

California State University, Chico

M.S. Degree in Computer Science Satellite-Delivered to Corporate Clients

Robin S. Wilson, President
Steven A. Adams, Marketing Director
Charles F. Urbanowicz, Associate Dean
Leslie J. Wright, Teleconference Coordinator

Institutional Setting

California State University, Chico (CSUC), in rural California ninety-nine miles north of Sacramento and 174 miles northeast of San Francisco, was established in 1887 as California's second state normal school. In 1984, because of its reputation for applying high technology to higher education, CSU, Chico was declared the most innovative campus in the nineteen-campus California State University system, according to a survey published in *California Higher Education.*

CSU, Chico is a comprehensive institution with a yearly budget approaching $100 million. Its eight colleges offer fifty-three

bachelor's-degree programs and 25 master's-degree programs. In fall 1986 there were 14,862 students enrolled at CSU, Chico and a faculty and staff of 1,885. Numerous students transfer into CSU, Chico their junior year, after completing their first two years at a California community college.

The community of Chico dates to 1841 when John Bidwell of Ripley, New York, crossed the plains of what was then Alta California, a province of Mexico, in one of the first wagon trains to cross the continent. Bidwell had the pick of the Sacramento Valley when he purchased a Mexican land grant of 28,000 acres. On Bidwell's Rancho Chico flourished an oak forest, wheatfields, vineyards, fruit and nut orchards, and lush grass meadows to support cattle and horses. Bidwell also grew countless specimens of trees, shrubs, and miscellaneous plants; to this day much of the CSU, Chico campus, once the center of Bidwell's estate, doubles as an arboretum.

In 1887 Bidwell donated eight acres of cherry orchards to the state, and the Chico Normal School, predecessor to CSU, Chico, was founded. The campus, which started with ninety students and five faculty members, now covers more than 130 acres.

Incorporated in 1872, the city of Chico has a population of some 33,000. It sits 230 feet above sea level, about two miles from the Sierra Nevada foothills, and is a major agricultural clearing house and processing center. The major crops of the region are (in order of cash value) rice, almonds, cattle, walnuts, peaches, prunes, olives, oranges, sorghum, beans, sugar beets, corn, alfalfa, milo, barley, grapes, wheat, and kiwi fruit. Chico also boasts an average of 219 clear days in a typical year and is the home of 2,400-acre Bidwell Park, the third largest municipal park in the United States.

CSU, Chico has the largest service area of the nineteen CSU campuses: 33,000 square miles of Northern California, or approximately 21 percent of the state's land mass. Resident population of the region is 600,000 (or 2.1 percent of the state's population), and the institution's quest to expand its boundaries to provide quality education to individuals off campus gave rise to the program described below.

The Program

CSU, Chico, through the use of satellite-delivered coursework, provides a Master of Science in Computer Science to corporate

locations throughout North America. Initiated in September 1984, the program innovatively provides graduate-level coursework to professionals who otherwise might be unable to attend a higher education institution within their immediate professional work site.

The program of computer science courses leading to the master's degree has been developed over more than a decade. Currently, the university graduates more than 250 computer science majors every year. In the late 1960s and into 1970, the California Coordinating Council of Higher Education conducted a study on the needs of higher education in rural Northern California. The report resulted in the creation of an extensive Instructional Television Fixed Service (ITFS) system throughout Northern California.

In 1975, through various funding sources, including system-wide money and federal dollars from the U. S. Department of Commerce (NTIA), an ITFS/Microwave link was established between California State University, Chico and the University of California at Davis, ninety-two miles south of Chico. The link allowed the Department of Computer Science at UC, Davis to use CSU, Chico computer science courses for its developing doctorate program in computer science.

That initial ITFS/Microwave system has expanded to become one of the largest closed-circuit educational television networks in the nation. The network now consists of fifteen remote sites throughout 33,000 square miles of Northern California. Through Instructional Television For Students (ITFS), more than fifty courses and entire degree programs are delivered electronically to thousands of individuals who save time and money by taking courses and earning degrees in computer science, the social sciences, education, business, and the liberal arts and sciences.

With Northern California ITFS, Chico created fifteen additional classrooms throughout the region: (a) without increasing the number of faculty, (b) without constructing fifteen additional classrooms on campus, and (c) without having to maintain fifteen additional classrooms.

In September 1984, the university began delivering an entire master's-degree program in computer science, live, via satellite, to the Hewlett-Packard Company at its plant locations in California, Washington, Oregon, Idaho, and Colorado. Eight graduate-level

computer science courses were electronically delivered to company locations from September 1984 through May 1985.

At a location 114 miles southeast from CSU, Chico, Hewlett-Packard has extensive manufacturing facilities. The company established facilities in Roseville/Rocklin, California, as it began to expand corporate locations beyond the San Francisco Bay area. Aware of the university's ITFS activities in Northern California, HP asked CSU, Chico to provide computer science courses to its new facilities in Roseville/Rocklin.

During the 1984-85 academic year, only HP locations received the satellitedelivered courses. As a result of a series of meetings with other company representatives, professional presentations, and almost a dozen professional publications, other corporations joined the program.

In 1985, CSU, Chico began broadcasting fifteen hours per week of live instruction via satellite and expanded the program to include Alcoa Laboratories, the Bently Nevada Corporation, General Dynamics, Texas Instruments, MCI Telecommunications, the Grass Valley Group, Pacific Telesis, and the Naval Weapons Center at China Lake. As of fall 1986, the master's-degree program via satellite was received at eighteen locations in eleven states: Arkansas, California, Colorado, Idaho, Nevada, Oregon, Pennsylvania, Tennessee, Texas, Virginia, and Washington.

The corporate clients at the various nationwide receiving sites are all professionals who are either working toward their master's degree or taking various courses for professional growth and/or development. CSU, Chico, through the Center for Regional and Continuing Education, works with the training offices of the various companies. The companies often have on-site training facilities. To participate in the CSU, Chico program, they must have satellite-transmission-receiving capabilities, an adequate classroom with television monitors, and a telephone for interaction back to the CSU, Chico campus. Some of the companies currently involved in the program already had more than adequate facilities. Others installed equipment, at their expense, to take part in the program.

CSU, Chico has a schedule of five computer science courses to be broadcast every week through spring 1989. Operating on the semester system, CSU, Chico is therefore broadcasting live, via satellite, approximately 450 hours of upper-division computer sci-

ence courses a year to nationwide corporate locations (5 courses x 45 hours/course x 2 semesters).

The success of the university's telecommunication activities was the reason CSU, Chico was rated "No. 1" in innovation by a 1984 survey of faculty and administrators of the nineteen-campus California State University system. Respondents noted the university's instructional television program, its continuing education program and external degree program, and its computerized library.

Through this facility, Chico has its entire library collection, more than two million items, in machine-readable format, accessible via computer terminals from anywhere in the world. It is one of the largest retrospective catalogs and is used by learners far away from the campus.

On the campus of CSU, Chico, the Center for Regional and Continuing Education operates within the following framework: the overall coordination of a project is handled by Continuing Education; the conduit (delivery system) is handled by the Instructional Media Center; the client or consumer makes a determination on the content to be delivered via the electronic medium.

The telecommunications activities at CSU, Chico involve many people. Most of the personnel working on these programs—including the Instructional Media Center staff, the Center for Regional and Continuing Education staff, the faculty in the various colleges, and the administrative staff of the various support services throughout the university—have been working together since 1975, when the ITFS program began. This history of consistent involvement and established, time-tested procedures and policies allows for smooth, efficient operation of the programs.

The Center for Regional and Continuing Education has been designated by the provost as the coordinating facililty for all aspects of ITFS and satellite at CSU, Chico. The professional staff of the center coordinates and oversees all of the various operations of both the Northern California terrestrial ITFS system and the satellite-delivered master's degree throughout North America.

A key element has been the development of the necessary administrative infrastructure to support both the ITFS and the satellite-delivered programs. This includes the hiring, training, and ongoing work with the off-campus site facilitators at the fifteen Northern California sites. The facilitators assume the responsibilities of

admissions and registration procedures, material and textbook distribution, examination proctoring, and any other necessary procedures. A similar administrative infrastructure has been established for the twenty corporate sites across North America that receive the satellite-delivered computer science courses.

The center's staff is the hub of activity among the receiving sites, faculty, campus offices, and the students. An elaborate in-office computerized data base has been developed to keep track of all this information. The center has fifteen years of experience in educational telecommunications activities, as evidenced by the success of the programs.

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Dakota State College (SD)

Business and Education Institute

Jerald Tunheim, President
David Cook, Vice President

Institutional Setting

The legislature of the State of South Dakota directed Dakota State College (DSC) to "provide instruction in computer management, computer information systems, electronic data processing and other related undergraduate and graduate programs . . . and to offer two-year, one-year, and short courses for application and operator training in the areas authorized" (House Bill 1351) during its 1984 session. This redirection of the college, which had been primarily a teacher education institution with a number of liberal arts and two-year programs, was instigated to meet the challenges and opportunities of South Dakota's changing economic needs.

During the early 1980s, the state's business sector, which had been predominantly based in agriculture, began attracting informa-

tion-oriented financial businesses. To enhance economic development, the legislature and the board of regents, which governs the state's colleges and universities, turned to DSC for the development of new educational programs to prepare people for this growing computer-oriented information systems sector of South Dakota's economy, as well as to prepare people to use computers to enhance the state's current businesses, schools, and agricultural operations. The college was to revise its teacher education program to enhance education through the application of appropriate technology and to better prepare future South Dakotans with the education essential for success in an increasingly technologically oriented society.

The Program

Dakota State College met the challenge of providing workshops and short courses in computer-related instruction to assist South Dakota's economic development by forming the Business and Education Institute (BEI). BEI was established in 1984 under the leadership of the college president to assist people in reorienting their careers toward the growing information-oriented businesses of the state, to help business managers put computers and information systems to work profitably, and to assist educators in using technology to enhance teaching and school administration.

BEI workshops serve both beginning and advanced computer users on a wide range of topics of interest to educators, government employees, businesses, agribusinesses, and other audiences, using the most popular computer hardware and software. BEI also responds to the specific needs of business and industry with custom-designed workshops. Besides offering workshops on the DSC campus, BEI travels to other locations across the state in response to economic opportunities. The program served more than 1,600 people in 1985, and in 1986, more than eighty-five workshops were held.

BEI provides other services to assist in the growing use of computers. A telephone hotline answers questions about microcomputers, software, peripherals, and applications. BEI offers one-to-one assistance to prospective computer buyers. It also offers workshops for DSC personnel, enhancing their computer experience.

The success of the the BEI concept—providing educational programs to prepare people for the challenges and opportunities of South Dakota's changing economy—led to the development of another educational program. Dakota State College, in partnership with the state department of labor, established a competency-based training program in modern offices procedures called the Job Training Institute (JTI). JTI, which operates under the auspices of BEI, initially opened in Sioux Falls, South Dakota, in January 1986, with an open-entry, open-exit program based on students' demonstrated competencies in the areas of word processing, financial operations, written and oral communication, and personal development. JTI is also an educational research and development center for competency-based education. Dakota State has concentrated on the development of special software tools to facilitate the use of computers in education. These tools are advanced computer programs that make it easier for faculty members to design educational computer applications for their classrooms. The computer-authoring and administrative software tools have made it possible to provide individualized and personalized education at a cost that finally compares with traditional classroom education. The educational and training developments of JTI are available for use in individualized and personalized education.

DSC is beginning another program to assist economic growth: the Institute for Entrepreneurial Development (IED). The center, authorized fall 1986, will encourage entrepreneurial activity through education, managerial, and administrative assistance, and technical support utilizing the talents of outstanding students, faculty, and staff members.

DSC students also participate in corporate relations through internship programs. Major businesses in the region benefit from the students' education and background and students gain valuable experience in applying their knowledge.

Along with its program director, teaching, and administrative staff, BEI taps the expertise of the college's faculty and technical staff. Dakota State is responsible for the JTI's curriculum and computer operations, and faculty and staff members from all departments of the college provide input, support, and assistance.

In its three-year transition, Dakota State College has responded to South Dakota's economic needs. The college's relationship

with business, industry, and state government has resulted in educational programs that create an able work force for an expanding economy and develop greater technological advances within existing businesses and industries.

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Empire State College (NY)

Circulation Management/Marketing Program

James W. Hall, President
Victor Montana, Director, Rochester Regional Center
Sharon Grigsby, Assistant for Student Affairs

Institutional Setting

Empire State College (ESC), the nontraditional branch of the State University of New York, was founded in 1971 to provide educational opportunities for students for whom work and family responsibilities make the residential college experience inappropriate. Headquartered in Saratoga Springs, New York, Empire State College has undergone dramatic growth in fifteen years and is currently serving almost 6,000 students at its forty-three locations across the state.

Empire State's curriculum stresses one-to-one instructional relationships and closely supervised independent study. Students work with faculty mentors to design individualized degree programs and can study in diverse areas in the liberal arts, sciences, professional studies, or other specialized programs. Degrees are offered at the associate's, bachelor's, and master's levels.

The college's program is designed to meet the needs of those individuals who have self-discipline and the ability to work independently (or those who have the willingness and capacity to develop such skills). Offering flexible enrollment options, personal attention, and a wide variety of learning resources, the college has

proven to be a highly successful model of innovation, with more than 13,000 graduates. Many say they would never have earned a degree had it not been for Empire State College.

Empire State's faculty, which numbers more than 200, offers an array of backgrounds, talents, and academic preparations, but shares the same sense of commitment to the principles and mission of the college, stressing the importance of the individual and high standards of academic performance. The faculty also provides the vital support systems which returning students often need.

The Program

Empire State's Circulation Management/Marketing Program began with the recognition by the university and Gannett Rochester Newspapers that the American higher education system offered nothing to people on the circulation side of the newspaper business. There were many journalism schools focusing on the editorial, reporting, or advertising aspects. Many business schools focused on management and marketing aspects of the newspaper business. Yet circulation, an essential element, was ignored.

As a result, the ESC sought and obtained grants from the Newspaper Readership Project, the Gannett Foundation, and the International Circulation Management Association (ICMA) to conduct research assessing the state of circulation education. Assisted by ICMA and the American Newspaper Publishers Association (ANPA), the three-year project surveyed circulation executives, publishers, and every school, department, or division of journalism or communications in the United States and Canada.

The data confirmed the essence of the original hypothesis. There were exactly two credits—not two courses, two *credits*—being offered in American colleges and universities on the topic of circulation.

The research also identified a clear need for a college-level management program in circulation, confirmed that there were indeed more than enough potential students within the newspaper industry, confirmed widespread support among circulation executives and publishers, and identified needed components of study. There were many potential students. However, there were few in any one area. They were all over the country, and further, they all worked full time.

Empire State College was the natural choice for such a program. A fully accredited arts and sciences college of the State University of New York, it is a unique adult institution. The average age of its students is thirty-seven; 80 percent of them work full-time; and ESC enables them to engage in independent study, one-on-one with faculty mentors. The college could readily design a delivery system for a national audience that incorporated intensive seminars in Rochester with independent study in their home communities.

In 1979, ESC began to create a quality management program for circulation employees that was fully accredited, inexpensive, and based on independent study.

In fall 1980 the college assembled a board of advisers representing newspaper industry executives, instructional designers, and journalism educators. In spring 1981 the board reviewed the project budget, assisted in defining the circulation component of the curriculum, reviewed the instructional design, and made recommendations for a funding strategy.

By fall 1981 the College had launched a major fund drive. ICMA and its twelve regional affiliates contributed $75,000. Additional contributions came from newspapers, individuals, industry suppliers, and foundations, including the *New York Times*, ANPA, and the Scripps-Howard and Ottoway foundations.

The program was inaugurated in May 1983 with ten students. It uses a variety of flexible learning alternatives, including independent study, cross-registration in courses offered by nearby colleges, and academic credit for college-level learning gained from on-the-job experiences and professional seminars. Students can design an individualized "double-focus" degree at the associate's or bachelor's level, which emphasizes business, management, and economics, with applied and theoretical study in circulation management and marketing.

The students vary as widely as the possible educational approaches available them. Some have completed three or more years of college credit. Others have brought as few as three transcript credits, and still others are seeking a second baccalaureate. Their titles range from circulation director to district manager in charge of a group of newspaper carriers. They are truly a national student population: in the first group of graduates there were two

from Rochester, New York, the program's "home," two from Pennsylvania, and one each from Virginia, Michigan, and California. A recent group admitted in October 1986 included students from Florida, Iowa, Illinois, and New York.

The program begins with an intense, three-day resident seminar in Rochester that involves orientation to the college and program, as well as case studies and speakers such as noted circulation law attorney Michael Zinsser of Memphis, Tennessee. Working with their faculty mentors, students identify the next 24-week period of study and develop a strategy—a learning contract—to accomplish it.

ESC is a statewide institution, with more than forty offices throughout New York, with state headquarters in Saratoga Springs. Students may pursue independent study at an Empire State location near home if they live in, or within commuting distance of, New York State. Or study may be done at a distance, using frequent letters, audio tapes, phone calls and even computers modems.

At the conclusion of that 24-week period, students return to Empire State for another resident seminar to complete that learning contract and begin another. The cycle continues until completion of the degree.

The first graduates described the program as more challenging than traditional college courses and more relevant to their careers. They praised their mentors for their combination of academic expertise and professional experience. They especially liked the case studies presented at the residencies, where they were reminded that there's more than one "right answer."

In addition to widespread support from the newspaper industry, the program has received recognition from the academy as a nominee for AASCU's G. Theodore Mitau Award for Innovation and Change in Higher Education.

As the program continues to develop, plans are underway to establish a cooperative arrangement with Utah State University.

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Jersey City State College (NJ)

Cooperative Education Program Internships
ADA Technology Center Workshops

William J. Maxwell, President
Ellen J. Wayman, Director of Public Information

Institutional Setting

Jersey City State College (JCSC), New Jersey's urban public college, is just west of New York City on the banks of the Hudson River's rapidly developing "Gold Coast." The campus consists of fourteen acres in Jersey City's Greenville section. The college's proximity to New York City and the burgeoning commercial centers of northern New Jersey provide a perfect practical setting for interaction with the corporate community.

Founded in 1929 as New Jersey State Normal School at Jersey City, the college has grown in the past fifty-seven years to become a multipurpose institution. After the enactment of New Jersey's Higher Education Act of 1966, JCSC assumed its present name and established its present academic structure. Degrees offered by Jersey City State include Bachelor of Arts, Bachelor of Science, Bachelor of Fine Arts, Master of Arts, Master of Science, and graduate professional diplomas in thirty-three academic areas.

Undergraduate enrollment in 1985-86 totaled about 6,000, with approximately 3,500 full-time students and 2,500 part-time students. About 1,850 graduate students are registered. The college has 242 full-time faculty members.

Major programs drawing the largest undergraduate enrollments in 1985-86 were business administration (30 percent); health sciences (13 percent); computer sciences (12 percent); and media arts (12 percent). The majority of graduate enrollment (75 percent) was in education, with fine arts (15 percent) and health sciences (9 percent) next in popularity.

Traditionally, the proportion of area residents educated at Jersey City State College has been high. About 60 percent of the students currently enrolled at the college reside in Hudson County; nearly 35 percent come from nearby Bergen, Essex, Union, Middlesex, and Monmouth counties. Students from other New Jersey counties, out-of-state, and foreign students account for only about 5 percent of the total enrollment.

The administrative structure of the institution separates academic departments into the school of arts and sciences and the school of professional studies and education, each headed by a dean; and the graduate studies division, headed by a director. The deans and director report to the vice president for academic affairs. Various administrative offices report to vice presidents for student services, finance and administration, and development and public affairs. Vice presidents report to the president, who reports to the college's ten-member board of trustees, which is appointed by the governor.

Jersey City, New Jersey's second-largest city, with a population of 220,248, is the seat of Hudson County. About 16 percent of the Jersey City area work force is employed in finance, insurance, real estate, and technical service industries; about 23 percent work in manufacturing. Major employers with corporate headquarters in Jersey City include First Jersey National Bank, Block Drug Company, Global Terminal & Container Services, Trust Company of New Jersey, Sabrett Food Products Corporation, Port Jersey Distribution, Commercial Trust, Provident Savings, and Scott Printing. Other major corporations in Jersey City employing more than 100 workers include Bankers Trust, TFM Industries, Alpha Metals, Alsten Company, and Monarch Industries.

Hudson County is experiencing a period of rapid economic expansion. In Jersey City, major commercial and residential mixed-use developments including Newport City, Port Liberté, and Harsimus Cove are under construction along the Hudson River waterfront. Harborside financial complex, a major business center, opened in 1986. Construction of corporate facilities has boomed in Secaucus as well. Scores of offices, manufacturing plants, outlet stores, and restaurants have opened since 1980. Buck Consultants Inc., Hartz Mountain Corporation, Panasonic, Gucci, and Zenith are among the major firms based in Secaucus.

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Approximately, 10,742 businesses are located in Hudson County. Of these, about 300 employ more than 100 workers. Once a leading manufacturing center in north Jersey, Hudson County today is realizing a noticeable employment shift toward finance and service-related businesses.

Since 1973, JCSC has progressively increased its involvement with the corporate community. Much of the initial contact with area business and industry was made through the efforts of the college's academic career planning and placement office, which administered a fledgling cooperative education program. Through the co-op program, students were given salaried work experiences related to their major areas of study at local corporations and businesses. The director of the career planning and placement office played an active role in the private industry councils of Jersey City and Hudson County. The president of the college and the vice president of development also became increasingly involved in the city's chamber of commerce.

The college is itself one of the largest businesses in Hudson County with an annual operating budget of $32,861,000 and a staff of more than 900 employees. A study of the overall economic impact of the college on the local community showed that JCSC, its employees, and students infused more than $30 million into the local economy last year. Furthermore, there is a noticeable tendency for area residents to remain in Hudson County or northern New Jersey following graduation. This trend has further strengthened the role of Jersey City State College as a supplier of employees for local business and industry.

The Programs

Cooperative Education Program Internships and ADA Technology Center Workshops, although targeted to serve different populations, have a fundamental purpose in common: providing specialized, highly skilled professional training to meet the specific needs of employers in the corporate community and the public-service sector.

To improve and greatly expand JSCS's twelve-year-old cooperative education program, a core team of administrators and faculty members responded to a challenge by New Jersey's governor to create a nationally recognized program committed to the highest

standards. The proposal was reviewed by an independent panel appointed by the office of the governor. The proposal was so well received that $5.7 million of a $10-million special legislative appropriation was allotted for the program. The largest grant ever received by a public college in New Jersey, the three-year grant is funding the expansion of the cooperative education program, so that by 1988 the college can link cooperative education with liberal arts education for undergraduates in all areas of study.

The challenge grant enabled the college to expand its co-op and career planning and placement staff by twelve positions, to involve its faculty and administration in training sessions, to join efforts with the National Commission for Cooperative Education, and to have a prominent member of the New Jersey business community approach peers to encourage corporate participation in internship placements and financial support of the co-op scholarship program.

Campus facilities for the co-op program include staff offices and a career planning reading room. Plans for a 125-bed co-op scholars dormitory and conference center are underway, with occupancy projected for fall 1988. Among the students living in the dormitory will be seventy-five corporate scholars, academically outstanding but financially limited students who will receive stipends of $5,000. Funds for the corporate scholars program are being raised from within New Jersey's corporate community with help from corporate officers. Among the major contributors are First Jersey National Bank, the Kaufmann Foundation, Block Drug Company, and U.S. and Foreign Trading Corporation.

Since its founding in 1973, the co-op program has placed more than 1,500 students in full-time work experiences, with a 100-percent program completion rate for undergraduates participating in the program. Last year, 248 students were placed in semester-long, salaried internships related to their major areas of study. Placements were made throughout the New York-New Jersey metropolitan region, most particularly in Hudson County. Some of the major corporations, business, and government agencies that participated in the internship program were First Jersey National Bank, Newhouse Newspapers, Teledyne Brown Inc., Prudential Insurance, Peoplexpress, Internal Revenue Service, RCA, IBM, and the City of Jersey City.

The cooperative education internships are managed by JCSC's director of cooperative education and the director of the academic career planning and placement office. The vice president for academic affairs has administrative oversight and works with the deans of the college's undergraduate schools to ensure that faculty training and participation in the co-op program proceed as planned. The shift in institutional direction brought about by the challenge grant involves various nonacademic areas under the vice president for finance and administration, the vice president for development and public affairs, and the vice president for student services.

The Ada Technology Center is another JCSC component that extends beyond the campus into the work sites of corporations and government agencies. Although upper-level students at the college may study Ada, a new international computer language being developed at the initiative of the United States government, and avail themselves of related co-op internships, the Ada Technology Center focuses on the design and presentation of training workshops for scientists, engineers, and professionals in industry, education, and government.

In 1983, Jersey City State College was designated the eastern United States center for the development and training of Ada. Ada is expected to become the major programming language of the next two decades. The college has received more than $700,000 in contracts from the Department of the Army to design education packages and to train students and professionals in Ada.

The Ada Technology workshops resulted from the initial contractual agreement enabling the college to establish its sophisticated Ada Technology Center. The concept was proposed in 1981 by a member of the computer science department who had consulted for the government on Ada training and research. The faculty member's reputation and professional expertise were important factors in the government's decision to base its technology transfer effort for the eastern region of the nation at Jersey City State College. After deliberations between the college's vice presidents, board of trustees, development fund board, and the U.S. Army, the Ada Technology Center was founded and the varied training programs in the center and onsite at corporate or agency offices were begun.

About fifty high-tech corporations and government agencies have enrolled 2,000 employees in one-day to four-week Ada train-

ing sessions, some of which have been conducted at the college, others at work sites. The college's advanced computer system, which includes three models in the Digital VAX series, and state-of-the-art software such as the Ada Language System (ALS), has attracted many corporations and agencies. Corporations that have sent employees to the Ada Technology Center for training include Lockheed Corporation, ITT, RCA, and Teledyne Brown Engineering. On-site workshops to meet specific equipment and security needs have been conducted at the facilities of Teledyne Brown Inc., the Federal Aviation Authority, Fort Monmouth, and the U.S. Defense Logistics Agency.

About 400 undergraduates at JCSC have studied the Ada computer language under ten computer science faculty members, consultants, and visiting researchers from business and government. Junior and senior students may enroll in four semester-long courses and gain hands-on experience in the Ada Technology Center computer laboratories.

The board of directors of the Jersey City State College Development Fund, the institution's nonprofit foundation, oversees the administration of Ada training contracts. The director of the Ada Technology Center reports to the dean of arts and sciences and works with the executive director of the college development fund on financial matters related to the acquisition of equipment or payment for training sessions.

At JCSC, the corporate/college relations programs have decidedly benefited students, institutional image, program recognition, and fund raising.

Students have been placed in valuable work experiences through the co-op internship program, and have learned a highly coveted computer language on state-of-the-art, high-tech equipment through the Ada Technology Center. The scientists, engineers, and educators trained at Ada special seminars have gained skills that will advance them professionally.

The institution has benefited on several levels. Interaction with the area business community has increased noticeably. Awareness of college programs has spread in professional, educational, and legislative circles. Corporate donations have increased significantly.

Clearly, the corporate community has benefited as well. Businesses and government agencies have identified outstanding students who meet their organizations' present and future employment needs. The co-op staff at the college has also assisted employers in developing co-op programs that include positions for specific corporate or agency needs. In evaluating co-op experiences, employers report interns have contributed positively to their organizations. Similarly, the corporate community has recognized the value of the Ada Technology workshops.

Both the cooperative education program internships and the Ada Technology Center workshops have developed because of strong three-way partnerships linking the resources of business, government, and academe. Substantial funding was awarded through grants or contracts to implement the proposals.

Jersey City State College expects to continue the program initiatives set in motion in both cooperative education and the Ada training workshops. In both instances, the program size and scope will be determined largely by student enrollment, professional needs, and fiscal factors.

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Memphis State University (TN)

Fogelman Executive Center

Thomas G. Carpenter, President
Deborah Baker, Media Relations Director
Laurie Finn, Media Representative

Institutional Setting

Memphis State University (MSU) was founded in 1912 as West Tennessee Normal School, a teacher training facility, and became known as West Tennessee State Teachers College in 1925. With an enrollment of over 1,000 and expansion of the liberal arts program

in 1941, the name of the school was changed to Memphis State College and in 1957, university status was attained.

In 1986-87, MSU had a total enrollment of 20,064, including 15,441 undergraduates, 4,189 graduates and 434 law school students. The faculty consists of 756 full-time instructors, with additional part-time faculty and graduate teaching assistants.

The university is administered by a president and four vice-presidents with responsibilities for academic affairs, business and finance, advancement and continuing education, and student educational services. MSU operates within the State University and Community College System of Tennessee, which is governed by a board of regents.

Memphis State University offers more than eighty different majors at the baccalaureate, master's, doctoral, and professional levels. The university is divided into five traditional undergraduate colleges: arts and sciences, business and economics, communication and fine arts, education, and engineering. The university also has a graduate school, a school of law, a school of nursing, a department of audiology and speech pathology, the university college (offering nontraditional undergraduate degree programs), and Army, Navy, and Air Force Reserve Officer training programs.

Memphis State University is located on 170 acres in the center of Memphis, a city of over 800,000 that serves as a national and regional center for transportation, health sciences, and high-technology business development. Although it has suffered from the decline in heavy industry with the closing of International Harvester and Firestone plants, Memphis is becoming home to an increasing number of high-technology businesses relocating from the North.

Rapid growth in Memphis' medical community has served to put the city in the forefront of medical research and service. Memphis is the home of St. Jude Children's (cancer) Research Hospital, LeBonheur Children's Medical Center, and the University of Tennessee's medical school and affiliated hospitals.

Corporations headquartered in, or operating out of, the Memphis area include Holiday Corporation, Federal Express, Sharp Electronics, Northwest Airlines, International Paper, and Brother Typewriter. In addition, some of the world's major cotton import/export companies are located in Memphis, including Hohenberg Brothers

Cotton Company, Allenberg Cotton Company, Inc., and Dunavant Enterprises, Inc.

Memphis State University has always maintained a close relationship with the business community through its college of business and economics and its division of conferences and seminars.

The Program

MSU's newest and most far-reaching example of corporate/college interaction is the Fogelman Executive Center.

Currently, one out of every four students enrolled in degree programs at MSU seeks that degree through the Fogelman College of Business and Economics.

The college was named for brothers Avron and Robert Fogelman, prominent Memphis businessmen who have consistently demonstrated their support for the university.

In 1980, the Avron B. and Robert F. Fogelman Academic Excellence Fund was established at Memphis State, through a $2.5-million endowment, to further develop the college of business and economics as it served the academic needs of Memphis, the Mid-South, and the State of Tennessee. The endowment was specifically designated for use in programs, program development, and program equipment for which state funding is not normally available.

In recognition of this contribution, the college was dedicated as the Fogelman College of Business and Economics in November 1980. More recently, the Fogelman brothers were involved in the establishment in 1986 of the $1.25-million Morris S. Fogelman Chair of Excellence in Real Estate, named for their father.

Although the Fogelman brothers have played a significant role in the development of MSU's business college and its involvement with the Memphis community, their role in the development of the executive training center was not financial. They lobbied extensively with the governor of Tennessee and other state legislators to make the building a high priority in state construction plans. It is generally acknowledged that the center and the building would never have happened without their help. In addition, the Fogelman Fund has contributed toward special computer and telecommunications equipment in the center.

The Fogelman Executive Center at Memphis State University has offered executive education to middle- and upper-level manag-

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ers of businesses, organizations, and government agencies from Memphis, the Mid-South, and the nation since 1985. The Fogelman Executive Center, with its outreach to the community, is a vital component in making the university and the Fogelman College of Business and Economics important factors in the community.

Conference coordination services offered by the center include the development of individualized programs, audiovisual equipment, satellite teleconferencing, and complete hotel and dining facilities. Trainers/facilitators for the programs are drawn from the faculty of the college of business and economics. Clients may select a variety of programs ranging from half-day seminars to week-long conferences and including annual meetings and one-time sessions. Operating year round, the center can accommodate approximately 400 people in a single day. The Fogelman Center also functions similarly to hotel conference centers by making space available to businesses and organizations wishing to conduct their own programs.

An assessment center, also operating out of the Fogelman Executive Center, designs, administers, and markets leadership assessment programs used by firms to evaluate the management characteristics of candidates for selection/ promotion.

The Fogelman Executive Center is located in a new, $7.5-million, 90,000-square foot building on the north end of the campus, next to the business college. Built with funds from the State of Tennessee, the center is a four-story brick building dominated by a central atrium. Forty-eight hotel rooms, with private outdoor balconies, line the perimeter of the fourth floor, and a three-room executive suite overlooks the atrium. The center houses three auditoriums, one with a seating capacity of 400, making it the largest auditorium/meeting room in the area. It contains four large, executive conference rooms, six seminar rooms, two fully equipped computer labs, and complete kitchen and dining facilities with a seating capacity of 250-400 people.

To attract clients, center staff members regularly call on area businesses and correspond with those out of the immediate area to market the executive development programs. Companies that have used the facilities for their own programs are approached about letting the center handle their future training needs. To date, companies/agencies that have used center services include Beatrice

Hunt-Wesson, the U.S. Postal Service, Orgill Brothers, and the Pickering Firm.

The Fogelman Executive Center operates under a director who reports to the university's vice-president for advancement and continuing education. The vice president is involved in the budget process, contractual matters and development of goals and objectives for the center but does not take an active role in determining program content. The director is responsible for the overall operation of the center. A program development and marketing director and an operations and special programs director report to the director. Additional center staff members include four program specialists, a conference coordination manager, a financial services manager, a building services manager, and an audiovisual/computer technician. Many staff members have come from business and industry while others have come to the center from other university positions.

Designed to be self-sufficient, the center is expected to begin breaking even in about three years. In the meantime, Memphis State will provide assistance.

While the business world benefits significantly from the products and services of the center, the university also reaps major benefits. Faculty members from business and economics serve as trainers/facilitators. The knowledge gained from teaching in executive-level education programs filters directly to the students in their regular undergraduate and graduate classes. It also enhances the professors' research capabilities. Further, the Fogelman Executive Center directly benefits students through a graduate practicum program offered in conjunction with the counseling and personnel services department in the college of education. The student will work directly with the director of professional assessment programs in the development, delivery, and analysis such programs. The Fogelman Executive Center will also indirectly benefit students. As the university experiences increased recognition and improved respect as a result of the center, students and graduates will also be accorded that recognition and respect.

Although its primary focus is on conducting business-oriented programs, the center is planning to develop law education programs and is considering programs in engineering.

The center, which falls outside MSU's academic affairs structure, will be responsible for all of the continuing education programs previously offered by the university's division of conferences and seminars. Academic departments and colleges, however, will be free to continue developing and operating their own programs, apart from the Fogelman Center.

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Southeast Missouri State University

Partnership with Atlas Plastics Corporation

Bill Wayne Stacy, President
Art Wallhausen, Coordinator of News Services
Lori Voss, Office of News Services

Institutional Setting

Southeast Missouri State University (Southeast) was established in 1873 as the Southeast Missouri Normal School. The name was changed to Southeast Missouri State Teachers College in 1919, and granting of degrees was authorized in that year. The name Southeast Missouri State College was adopted in 1946. The changing curricula and educational mission of the school were reflected in the latest modification in 1972, when the board of regents, acting under authority from the Missouri General Assembly, approved the name Southeast Missouri State University.

The university has grown to a fully accredited, multipurpose institution serving over 9,000 undergraduate and graduate students, with 400 full-time and 153 part-time faculty members.

The executive officers of the university are the president, provost, executive vice president, vice president for student services, and vice president for business and finance.

The university is divided into five colleges, including business and public administration, education and behavioral science, hu-

manities, science and technology, and social sciences. The school of graduate studies and extended learning supervises postgraduate degree programs and off-campus course offerings.

Students in the university's five colleges select from over 100 areas of concentration, including six certificate programs and ten preprofessional programs. Southeast offers associate, bachelor's, master's, and specialist degrees.

The college of business and public administration serves approximately 40 percent of the students who have declared majors. Social science majors account for about 18 percent of the enrollment, followed by science with 16 percent, education 14 percent, and humanities 12 percent.

Cape Girardeau as a city is similar to Southeast as a university. Both are average in size, prosperous, progressive, and vital to the region. With a population of approximately 35,000, the city affords its residents plenty of green, wooded countryside, bordered on the east by the scenic Mississippi River. Located midway between St. Louis and Memphis, "Cape" is easily accessible by Interstate 55. A new river port promises new economic development.

The local economy consists of five major components: industry, medical services, retail services, education (with most emphasis on the university), and agriculture. The city is emerging as an area service center, with an increase in the number of professional services offered.

Cape Girardeau County's unemployment rate is a low 4.5 percent, with a labor force of 33,000. The major industries are relatively stable, so the threat of large layoffs is unlikely. Local employers may list available jobs with a campus placement service, a cost-effective way to recruit. Approximately one-fifth of the University's graduates live and work in Cape Girardeau and adjacent counties.

The university serves the educational needs of all Southeast Missouri, including the needs of the urban St. Louis area to the north and the needs of the agricultural and out-of-state business economy to the south. Most of the students live in the district the university was designated by statute to serve. Approximately one-third of the students come from the St. Louis area, one-third from Cape Girardeau and adjacent counties, and one-third from other Missouri counties, out of state, and other nations.

The Program

Southeast has established a partnership with Atlas Plastics Corporation, a subsidiary of the Mississippi Cape Corporation. The corporation extrudes flat, thermoplastic sheets for various manufacturing purposes. It employs approximately 250 people and is thus among the top 20 percent of area employers in terms of size. The university provides Atlas Plastics with faculty consultants, student interns, and laboratory facilities in exchange for financial support and a place for interns to work. The company recently pledged $25,000 to the university for the purchase of industrial technology laboratory equipment.

One objective of the internship program is to allow students to become actively involved in business while they are still students in order to gain real world experience. In addition, students earn class credit and minimum wages for their work.

Of the six students presently serving internships, two work in computer science, one in accounting, two in marketing, and one in the laboratory. The students assist with various projects related to their major course of study, such as marketing related projects, advertising, market/product surveys, or research. Students with marketing capabilities help develop components of a marketing plan and analyze sales by product, salesperson, and region. Laboratory interns with research abilities help with product development and testing, color processing, processing of resins, and data processing. The students are supervised by a department head or a full-time Atlas employee and work closely with permanent staff members.

Atlas Plastics contacts the university when the need for a student arises in the company, and a faculty member recommends several students for the work. Atlas then interviews the students and makes the final selection. Students typically work twenty hours per week and are required to work 150 hours during the semester to earn three credit hours. Performance is monitored closely by Atlas personnel and the student's instructor at the university. Each department having student interns has an internship committee composed of faculty members who determine whether the student has fulfilled internship credit requirements.

The program operates throughout the fall, spring, and summer semesters. Expansion to include more students is planned for the future.

A faculty member who has served as a marketing consultant for Atlas Plastics was instrumental in developing the relationship between the university and industry. It was his initial contact that attracted corporate support for the university. Atlas Plastics responded with generous financial support, and through a mutual understanding, an internship program began. Since fall 1984, ten interns have participated.

Organization and implementation of the program is rather informal. It is still operated on a relatively small scale, with the students enrolled in the business and science/technology. The project coordinator and the dean of the college of science and technology are primarily responsible for its administration.

The partnership, designed to build the relationship between industry and education, has proven extremely beneficial to both parties. Students are given the opportunity to put their knowledge to use and get some practical experience. Upon graduation, several students have become full-time employees of Atlas Plastics as a direct result of having served there as interns. Atlas employees are assisted with various projects and sometimes enriched by a fresh, new perspective. Southeast has benefited from the significant financial pledge from Atlas with the promise of additional aid in the future.

An economic development proposal that would strengthen the partnership between Atlas and the university is currently under consideration. Developed by the Missouri Coordinating Board for Higher Education, the Higher Education Applied Projects Fund would help encourage small business development as well as cooperative projects between Atlas and the university. Submitted to the state for approval, the university would provide $282,000 toward the project, and Atlas Plastics would provide $141,000. The funding would allow the purchase of equipment to be shared by Southeast and the corporation. A plastics testing complex would be established and divided between the university and Atlas Plastics, with each party having access to both. The university would have chromatography equipment, which is used to make chemical separations and determine the size of molecules in plastics and a scan-

ning electron microscope, to determine the gross structure of polymers and permit detailed studies of failures in plastic materials. Thermal analysis equipment would determine melting points and related flow properties of plastics.

A physical testing component necessary for product development would include equipment to measure impact resistance, hardness, tear resistance, tensile strength, stress-strain properties, and weathering characteristics of plastics. This component would be located at Atlas Plastics.

This purchase and utilization of the new equipment would expand the capabilities of the local plastics industry, thereby increasing the number of jobs available to area residents.

As a result of increased publicity of the existing program, the relationships between other industries and Southeast are expected to expand in the future. Faculty members from the university speak at service clubs in the area to familiarize more employers with the concept of internships. It is hoped that increased awareness will yield more opportunities for corporate/college relationships.

Part 3

Direct Delivery of Services

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Eastern Illinois University

Community Business Assistance Center

Stanley Rives, President
Allen F. Messenger, Director, Regional Business Services

Institutional Setting

Eastern Illinois University (EIU) began in 1895 as Eastern Illinois State Normal School, becoming Eastern Illinois State Teachers College in 1921, Eastern Illinois State College in 1947, and Eastern Illinois University in 1957. It is one of five state universities under the jurisdiction of the state's board of governors of state colleges and universities, to whom the president is finally responsible for the operation and general welfare of the university.

EIU is located in a rural community of approximately 20,000 residents in East Central Illinois. The campus proper occupies 316 landscaped acres in the center of the city, with additional wooded tracts used for nature study and life science research just outside Charleston. Approximately one-third of EIU's students come from the Chicago area, one-third from the eighteen county area immediately surrounding Charleston, and one-third from other areas of the state. The campus has an international influence, with many foreign nations represented in the student body. Most undergraduate students are within the traditional 18-22-year age range. In 1986-87, EIU enrolled 8,715 full-time and 372 part-time undergraduate and 351 full-time and 544 part-time graduate students. Those students are served by a faculty consisting of approximately 700 members.

The university is functionally organized into three areas, each headed by a vice president: academic affairs, student affairs, and administration and finance. Academic units, each headed by a dean, include arts and sciences; business; applied sciences; fine arts; health, physical education, and recreation; education; and the graduate school.

The Program

At EIU the office most directly responsible for the relationship between the institution and the corporate community is the Community Business Assistance Center (CBAC). This office was established in 1965 but did not become a full administrative unit until July 1, 1983.

CBAC's mission is to serve the business needs of both private- and public-sector organizations within the East Central Illinois region. In recent months, 140 client organizations in forty Illinois and Indiana cities have been assisted. Service has been provided in three categories: training and development, consulting, and business research.

Recognizing that the most important asset of any organization is its human resources, CBAC has developed nearly fifty workshops and seminars offering practical approaches to assist participants in obtaining workable solutions to their most pressing job-related problems.

To increase human effectiveness at the individual, group, and organizational level, both prepackaged and custom-designed programs are available to the community. Prepackaged programs are offered both as public seminars and on-site presentations. Public seminars are open to anyone who preregisters. They are particularly well-suited to the individual or the small business that chooses to send only one or two employees. On-site presentations are a more cost-efficient method of training in organizations that can guarantee group enrollment for a program. Prepackaged programs can often be modified to accommodate the specific needs of an organizational environment. Custom-designed programs on any business topic can be prepared for the exclusive use of clients in those situations where prepackaged programs may not quite meet the needs of the organization.

CBAC assists EIU faculty members, within the college of business and other colleges, in developing consultancies with organizations. To dispel the myth of the ivory tower academic who is out of touch with reality, faculty members are encouraged to participate in organizational improvement efforts under the direction of the CBAC staff. Typical projects include employee safety and health,

productivity improvement, labor relations, and marketing, planning, and management development.

The CBAC consulting process consists of the following steps:

1. *Initial Contact.* A need for organizational improvement is recognized by the client. A CBAC staff member meets with the client to explore the readiness for change.

2. *Contract Formulation.* The details of the consulting relationship are formalized, including expected outcomes, time involved, fees and expenses, and resource availability.

3. *Development.* The actual consultation begins. Records are maintained for subsequent evaluation.

4. *Identification and Diagnosis.* The problems confronting the client are specified and analyzed in depth. Alternative approaches are outlined and a preferred course of action decided.

5. *Planning.* Goals and objectives are mutually determined. The potential consequences of the action plan are explored and a schedule of events produced.

6. *Evaluation.* When the project is completed, outcomes are measured and compared with projected results. If discrepancies are detected, adjustments are made and the process is repeated.

Within the framework of CBAC, an additional consulting dimension is performed by senior-level and graduate students through the Small Business Institute (SBI), supported by the U.S. Small Business Administration. Typical projects include feasibility studies, market research, market specifications, organizational structure, and marketing planning.

In the SBI consulting process,

1. Initial contact with the prospective client is made by a CBAC staff member. The client's specific needs and scope of consulting services are determined with the client.

2. A faculty instructor representing an appropriate business discipline is contacted by CBAC to determine the relevance of the consulting engagement to academic work. The instructor selects a student consulting team to conduct the project.

3. The student consulting team works directly with the client to analyze problems and develop solutions.

4. Goals and objectives are established with the client as a prelude to implementing the action plan.

5. Final evaluation of the consulting project is made by the instructor, the client and a CBAC staff member.

Many progressive firms call on CBAC for help with research projects. Although CBAC can conduct pure research, most requests are for applied research, which focuses on one or more problems or opportunities facing the firm. Typical research topics might include workers' compensation claims, market analysis, plant productivity, or work-place demographics.

The distinction between research and consulting is significant. In general, the researcher serves as data collector and analyst, submitting his or her findings to the client for action. The consultant, however, typically plays a more active role and may be given sufficient autonomy to make decisions on behalf of the client. Additionally, some research projects may require several months to complete whereas most consulting assignments are of much shorter duration.

CBAC is administered by the college of business and managed by the director of regional business services, who is responsible to the dean of the college. The director is responsible for marketing, program development, promotion and publicity, contract negotiations, and providing assistance in regional economic development activities. He is assisted by a full-time secretary. Salaries for these positions are funded by the college's budget.

CBAC has provided employee training and staff consulting services to many constituents in the region. The rural nature of the university's service area limits the availability of such services from the private concerns that offer them in more densely populated areas. Students benefit from their exposure to actual business cases, as do faculty members. Instruction is enhanced and curricula updated as a result of faculty exposure to current problems. Student internships and job placement are expanded and enriched.

Under the program's new leadership, EIU anticipates greater individual contact in the business community, a larger role in regional economic development, and increased numbers of training and development programs.

In addition to CBAC, the college has a twenty-six member advisory board composed of corporate and business executives. The purpose of the dean's business advisory board is to provide an interface between higher education and the business world, to pro-

mote good relations between the two sectors, and to advise on and promote programs offered by the college.

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Fitchburg State College (MA)

Montachusett Economic Center

Vincent J. Mara, President
Daniel S. Flynn, Assistant to the President for Development

Institutional Setting

Fitchburg State College (FSC) was organized in 1894 as a normal school for teacher training. In 1933, it was named a teachers college and in 1962 was designated Fitchburg State College.

The college is tax assisted and is governed by the Massachusetts board of regents and its own board of trustees, appointed by the governor. Academic governance is accomplished through an all-college council of faculty, students, and administrators. Fifteen academic chairpersons oversee the offering of twenty majors and twenty-two minors.

The college offers the Bachelor of Arts or Bachelor of Science in biology, business administration, chemistry, communications/media, computer science, early childhood education, economics, elementary education, English, geography, history, human services, industrial arts, industrial science, mathematics, medical technology, nursing, pre-law, psychology, and special education.

Graduate programs offered by the evening division include Master of Science degrees in education, management, computer science, counseling, and communications/media. The division also offers a Bachelor of Science in business administration and certificate programs in computer science.

The college enrolls 3,600 FTE students in its day division programs and approximately 1,500 part-time students per semester in the graduate and undergraduate divisions. Since the early 1970s

FSC has expanded its career programs for business and industry. Teacher education majors dropped from 80 percent of the student body to 20 percent, while enrollments in four business-related majors rose from thirty-six students to over 1,300. Currently, some 21 percent of the study body is enrolled in education, 10 percent in arts and sciences, 20 percent in allied health and human services, and 49 percent in business technology.

Located in North Central Massachusetts near the New Hampshire border, the college serves the Montachusett Region, which includes three major urban centers exceeding 110,000 in population and more than a dozen suburban towns with an additional population exceeding 140,000.

The local economy is mixed, with the urban areas dominated by manufacturers of plastics, paper, wood products, machine tools, and high-technology products. In addition, many residents commute to the Boston or Worcester areas for employment in health, high-tech, and a variety of service industries. The area also includes many indigenous retail and service employers. The local employment rate is usually outpaced by statewide trends, tending to fall off more rapidly in downturns and rise more slowly in upswings. It is an economy in transition, with a large, but continuously eroding, base in paper and plastics manufacturing.

The college and community have long interacted. As a normal school, FSC was founded by the legislature in response to requests by area residents concerned with teacher training. The college still maintains a working relationship with local school districts. The majority of Montachusett area teachers are Fitchburg State graduates, and collaboratives among area school systems on topics such as special education diagnosis, classroom computerization, and the retraining of science teachers remain active. The college annually offers area school children writing, history, mathematics, and industrial arts workshops, conferences, and display opportunities. A similar interaction is programmed into all college majors through an extensive internship effort that provides practical experience for career-oriented students. Of the Montachusett region's 210-240,000 residents, some 4-5,000 hold degrees from the college.

The institution is an important force in the local economy and is the region's third largest employer, providing one of the largest

and most stable payrolls. The college is unquestionably the area's main source of college-educated labor, attracting more than 2,600 students from outer regions of Massachusetts and New England and assisting in the retention of 20-40 percent of the local high school graduates.

The Program

The college has several community relations programs through which it interacts with the corporate community. These include a President's Circle, a group of community advisors; the FSC Foundation, Inc., the college's corporate fund-raising arm; the FSC internship program; and an evening division joint venture with the chamber of commerce to offer noncredit business programs.

The main corporate assistance/relations program for the college, however, is the Montachusett Economic Center (MEC), which provides marketing and management assistance to local corporations as well as government and nonprofit agencies. In addition, it offers two annual seminars, one on taxes and one on a current topic of interest to local business people. Its mission is primarily economic development as an incubating agent for small businesses.

The center is directed by a marketing professor from the business administration department. Working with a reduced academic load, the director coordinates several college resources whose common goal is resolving business needs. The director is assisted by another marketing professor who coordinates a business laboratory program as part of the center's services.

The center receives requests for assistance from many sources: directly from corporations or through interactions and referrals from the Small Business Administration, the Society of Retired Executives, the local chamber of commerce, or the college's own Small Business Institute. These requests are evaluated for their relevance to the college's curriculum. Each request must meet the needs of students for academically valuable experience and be within their capacity to achieve.

In responding to any request, the center interacts with other college departments. For example, questionnaire design may require the advice of a psychology professor, or a computer systems issue may involve expertise from computer science faculty or stu-

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dents. In this way, the center operates as a coordinating agency to bring many college resources to bear in an interdisciplinary fashion upon local business development. Most of the projects require intensive interaction among the faculty, students, and corporate executives.

The center operates primarily during the academic year. Normally, it seeks to select projects that can be completed in one semester. The center operates during the summer to evaluate projects, add finishing touches, or set plans for new projects.

Numerous campus facilities are involved in MEC activities, including computer services, the library, the print shop, the graphic design division, college auditoriums, and other facilities. Secretarial assistance and a phone bank are used in telemarketing research. The center is also developing a statistical library of information about the Montachusett region. The information is culled from the college's own research and data from government agencies.

The Montachusett Economic Center was initiated by the FSC president following the first community-based fund-raising drive in the college's history. The significant response of the local corporate community to the drive merited a significant response from the college. In fact, the availability of income from the drive permitted the college to fund seminars and provide small grants to faculty members working with students on special programs.

The campus and the corporate community had many contacts (e.g., the fund drive, an intensive internship effort, and the President's Circle) prior to the establishment of MEC. However, MEC, as a specific effort to improve the region's economy, was a new effort emphasizing direct service to developing corporations in the area.

Little prior planning or negotiation was conducted between the college and corporations prior to the establishment of MEC. Informal interchanges had occurred and economic development activities were among the items for funding discussed prior to the fund drive. Since then, however, there has been increased interaction between the college and the corporate community. Discussions have focused primarily on the ways MEC could reasonably serve the economic needs of the community, and on the kind of experiences that would be most valuable to the students. Some elements of the local business community—particularly accounting, marketing, and advertising firms—were concerned that the es-

sentially free services of the center would be competitive with their own businesses. These concerns have helped MEC focus purely on service as an incubation agency. Negotiations on such matters have occurred on a project-by-project basis.

To form the MEC partnership, the following internal campus administrative efforts were required:

1. Two faculty members were placed on reduced teaching loads, and one secretary was assigned to administer the program.

2. No alterations in campus structure were required. The faculty members continued to report to the chair of the business administration department, who oversaw the program in relationship to that department's mission and curriculum.

3. No internal campus, union, or state regulations impeded the effort, primarily because funding came from the college's private foundation.

4. The MEC partnership is between the college and the economic community; specific corporate efforts have not been required to form it.

The program is self-managed, reporting to the chairman of the department of business administration. Major tasks required to administer the program include the evaluation of the feasibility of projects; coordination of student, faculty, and college resources; interaction with cooperate executives; and bookkeeping, budgeting, and auxiliary tasks.

The president has final authority over administrative and funding support for the program. The curricular function of the program is governed by the college's academic vice president. The assistant to the president for development coordinates the program as part of the larger external relations efforts of the college.

The college's commitment to MEC includes the assignment of two faculty members with reduced teaching loads to administer the program, and the addition of one secretarial position to the college. MEC is funded with both public and private resources. Staff members are paid from the state payroll, and project needs such as travel, printing, telephone, etc. are funded by earned income or Foundation money.

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Northwest Missouri State University

"Cradle Project"
Small Business Development Center
Dietary Manager Program

Dean L. Hubbard, President
Peter Jackson, Associate Dean of Faculty/Dean of Graduate School

Institutional Setting

After an act of the General Assembly of the State of Missouri created the Fifth Normal School District, Northwest Missouri State University (NWMSU) was established in Maryville in 1905. In 1919, by an act of the general assembly, it became the Northwest Missouri State Teachers College, authorized to grant bachelor's degrees. In July 1949, the board of regents of the college, acting on authority granted by the general assembly, changed the name to Northwest Missouri State College. Under authority of the 1972 general assembly, the board of regents changed the name of the institution to Northwest Missouri State University, effective August 5, 1972.

A variety of undergraduate degrees and programs have been developed. One associate degree as well as several certificate programs continue to be available. Graduate work leading to a master's degree in education was first offered in 1955. The university has been involved continuously in offering graduate work since 1955, and in 1970 the education specialist degree was added. The university has continued to enjoy full accreditation of all programs from the appropriate accrediting bodies.

Although the institution was initially conceived to accommodate students from the nineteen Northwest Missouri counties, the service area for the institution has been broadened. A large percentage of students are from communities within a 100-mile radius encompassing southeastern Iowa and parts of Nebraska and Kansas. The university actively seeks a larger national and international student body.

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Fall 1986 enrollment showed 4,232 undergraduate students (part and full time) and 644 graduate students (part and full time). These numbers generally reflected an overall consistency with the student population of the areas from which NWMSU draws its students. Full-time faculty numbers 234, with additional part-time faculty bringing the total to approximately 250. The administration, encompassing all levels, numbers approximately 100.

NWMSU is served by an eight-member board appointed by the governor of the state. One of the regents is a student, selected by the governor, and another regent (ex-officio) is commissioner of education for the State of Missouri. Of the eight-member board of regents, six are voting members. The board of regents employs the president of the university. The university administrative structure consists of the president, a vice president for academic affairs, a vice president for administrative and student services, a vice president for finance, a director/vice president for applied research, and a public relations officer. The vice president for academic affairs supervises four academic deans and the library director. There are twenty-four academic departments headed by chairpersons or directors.

The twenty-four academic departments offer seventy-nine academic majors in eight different bachelor's degree programs; four master's degrees are offered. The college of education also offers a Specialist in Education degree for superintendents, elementary and secondary school principals, and supervisors or directors. In addition, NWMSU offers fifteen preprofessional programs and eleven one-year and two-year certificate programs.

The campus is located in Maryville, the county seat for Nodaway County. The campus is in the northwestern section of the city and is approximately 700 acres in size (including several university-owned farms). The population of Maryville is 9,600, the county population 22,000.

For its economic base, Maryville relies largely on ten manufacturing or production companies and Northwest Missouri State University, which has the largest payroll in the city, with over 500 employees. The Eveready Battery Company is the largest single employer with 600 employees, with nine other plants ranging from ten to 100 employees. In addition to the major employers, many small businesses act in a supportive role and provide specialized

services as well as general support to the city and county population. As the general area surrounding Maryville is rural, farming, both row crops and animal production, dominates the labor force, whose availability is fairly constant. The identified labor force for Nodaway County was projected at approximately 11,000 in 1984.

As Maryville is a fairly small community, there have been ample opportunities through the years for NWMSU/community interaction. In almost all instances it has been a positive, on-going relationship. Faculty and staff members and alumni have served the city and county in many ways. The university continues to benefit from the resources available from the community, county, and district. In turn, the community continues to recognize the value of Northwest Missouri State University to the region.

The Programs

Over the years, the university and local business and industry have enjoyed a productive, cordial relationship. This is currently evident in three programs: the Center for Applied Research's "Cradle Project" Model, the Small Business Development Center, and the Dietary Manager Program.

The Center for Applied Research has been established to bring together three essential elements for change: (1) management and academic talent, represented by faculty members, graduate students, consultants, and experts from agriculture, corporate, and other private sources; (2) the management environment of appropriate physical and financial resources to support research projects; and (3) the management environment to nurture ideas, inspirations, concepts, technology, processes, or products. Applied research, unlike basic research, is conducted in the real-world environment. The Center for Applied Research provides a degree of protection from outside pressures that would compromise carefully controlled processes for implementing a plan of action.

Located in the "nation's bread basket," the university's service area includes the four-state region of Iowa, Nebraska, Kansas, and Missouri. Within a 150-mile radius of the university's campus, three million people live in metropolitan and rural settings.

For the last four decades, the region has been the scene of a rapidly accelerating application of technology in the production of the traditional row crops (corn, soybeans, wheat), and in animal

production (beef and pork). This commitment to technological change has resulted in today's farmer's ability to now feed over 125 people. Yet, high-yield production, often without regard to changes in eating habits or other countries' ability to produce their own food, has resulted in a reduced world demand for America's food production. Federal government programs have contributed to domestic farm problems by using food as an instrument of foreign policy.

Further, some university programs of traditional crop research have contributed to the American overproduction dilemma. A method or process for exposing farm families to the fundamentals of producing alternative crops, incorporating sound conservation practices, is needed. If marketable alternative crops, products, or value-added products are identified, the farm economy can be strengthened and the farm family sustained. Therefore, it behooves a university to take a leadership role in this area. For these reasons, the university established its Center for Applied Research.

In summer 1985 several experts were invited to speak to a group of faculty members representing business, agriculture, education, and technology; and regional representatives including businesspeople, farmers, livestock managers, conservationists, bankers, and University of Missouri extension personnel. The group studied a variety of options for NWMSU's leadership and service. The open and free discussions refined the concepts into a plan of action called the "Cradle Project" model. This model calls on university faculty and staff members to work with external resource people to target potential crop alternatives and/or manufactured products for the market place. The Cradle Project model is a procedural method for determining, using a formal business plan, the viability of an idea or product. The concept was finally ready for field testing.

In November 1985, top officials of Frito-Lay, Incorporated, were contacted about participating in a meeting at the university. As a result, sixty-one area farmers met with two executives of Frito-Lay to discuss potato chip production market opportunities. Seventeen of the farmers expressed an interest in continuing the investigation. The result was the formation of the first Cradle Project group consisting of a university agricultural economist, a university horticulturalist, a graduate student, twelve interested farmers, the

director of the center, and the dean of the college of agriculture, science and technology. A detailed market and production analysis was undertaken. A formal presentation of the Cradle Project to officials of the Tennessee Valley Authority (TVA) resulted in the pledge from TVA of up to $2,500 worth of fertilizer for the potato project.

In December 1985, the Cradle Project group met for preliminary review of the market and production analyses, and at that point, eleven farmers and farm managers indicated a willingness to participate in the Contract Potato Project with Frito-Lay, Inc. and the Center for Applied Research. A final report on market and production projections was positive, and the group made a commitment to continue final planning for the research project.

Contract negotiations between the individual farmers and Frito Lay led to the agreement that Frito-Lay would provide 2,000 pounds of seed potatoes per acre, at no up-front cost to the farmers; the farmers would reimburse Frito-Lay for the seed from production proceeds. Frito-Lay would provide all planting, seed preparation, and harvesting equipment for the project. A contract price of $5.50 cwt was agreed upon. Thus, Frito-Lay amply demonstrated its willingness to negotiate, to share the risk, and to bring in equipment for the project. The farmers provided the land and their management skills to the project. The Center for Applied Research brought producer and market together by providing leadership in preparing contracts between the farmers and Frito-Lay and agreements between the farmer and center. Included in the agreement between the farmers and the center was the stipulation that the farmers, after repaying Frito-Lay from production proceeds and paying their own expenses, would divide any remaining profits equally with the center to help the latter overcome some of its expenses. The center provided a project manager from the faculty and the consulting services of an experienced and successful potato grower. The center also provided a university graduate student to visit each of the farm sites weekly to collect data and prepare detailed records of soil temperatures, planting, growing, and harvesting developments. The Missouri Farmers Association (MFA) agreed to provide up to $4,500 for pesticides and herbicides for the farmers' use. The Center for Applied Research obtained additional funding, including $8,000 from the University of Missouri

Extension and $10,000 from Project Hometown America. The center managed all aspects of planning and administration of the project, while consulting regional leaders, corporate and business executives, and government leaders.

The project proved economically beneficial on seven of the eleven selected test sites. The seven plots produced a total net income of approximately $26,000, of which 50 percent was shared with the Center for Applied Research.

The Center for Applied Research Cradle Project model is now being used in four additional projects involving area farm families, multinational corporations, Missouri-based industries, and a Third World country inventor to research and develop a variety of farm-produced products, manufactured goods, and services.

The Contract Potato Project has contributed to faculty development. Faculty members have had an opportunity to work with real-world problems, with farm families who are facing real dilemmas. Graduate students worked on a real-world problem that enhanced their exposure beyond traditional academic experiences. Of major importance to the university was the opportunity to be an agent of change not only for its faculty and students but also for the citizens of the region it serves. Finally, the farmers benefited from the project as they developed new skills and discovered new resources.

Another NMSU corporate/college relations program is the Small Business Development Center (SBDC), a major management assistance program of the U.S. Small Business Administration (SBA). The mission of each SBDC is to serve as a focal point for linking the resources of federal, state, and local governments together with educational and private sources for the promotion and assistance of small businesses. The center's goal is to use all available resources to provide in-depth, quality assistance to small businesses for the promotion and growth of employment.

The center's area of operation includes ten counties in Northwest Missouri. The first year's budget was $100,000, $50,000 of which comes from SBA federal funds. The $50,000 in matching resources is provided by Northwest Missouri State University, Missouri Western State College, United Telephone Company, St. Joseph Light & Power Company, the Maryville Chamber of Commerce, and the St. Joseph Chamber of Commerce.

During its first year of operation, the center provided assistance to 146 business clients throughout the ten-county area. As of September 1986, the center had completed its work with ninety-two clients; fifty-four clients were in the active files. Requests for assistance during the first year included new start-ups, problem solving, acquisitions, expansion, marketing and sales, selling business, merger, information, procurement, and planning.

In August 1984, NWMSU hired a new dean for the college of business, government, and computer science who had experience with SBDCs in another state. Through his experience and that of others, an application was prepared and a grant secured. The Northwest Missouri SBDC began operations in October 1985.

The program is administered by the SBDC director, who reports to the dean of the college of business, government, and computer science. Major tasks required to manage the program include conducting needs assessments of clients, employing appropriate consultants, and giving sound professional advice. The full-time director is assisted by a full-time secretary and one part-time staff person. However, any one project may involve as many as four or five faculty members and/or consultants and several students who are supervised by one of the faculty members. The program is guided by an advisory board and a large group of ad hoc professional persons.

The Dietary Manager Program is a vocational training program for individuals currently working in food service in nursing homes and hospitals. The program is designed to provide the training necessary for the institutions to be approved by Medicare-Medicaid.

An advisory committee consisting of nursing home administrators, dietitians, and university representatives identifies areas in which instruction is needed and provides advice about the time and place of the offering. The university administers the program.

The program primarily benefits 10-20 nursing homes and hospitals within the Northwest Missouri geographical area. These students must be currently employed in food service. The program operates on demand from September through June. As least ten students must be enrolled to support the program. The course involves ninety clock hours of classroom instruction and 150 clock hours of supervised field work.

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The director of continuing education, the dean of the college of agriculture, science and technology, the home economics department chair, and the specialist in food and nutrition are involved in the program. The university has final authority over the program. The program is primarily administered by the department of home economics, with the normal approval routes through the university administration. The major tasks to administer the program are to conduct needs assessments, employ qualified instructors, arrange for appropriate facilities for the classes, process enrollments, supervise the program via communication with instructors and a few classroom visits, conduct final program evaluations, and award CEU certificates at the completion of the programs. These tasks are performed by the home economics department chair and require between 50-80 clock hours per year. No staff is employed to administer the program. A registered dietitian must be employed to teach the program.

Administration of the program is not funded beyond the regular salaries of those involved. Seventy percent of the teacher's salary is provided through vocational education funds for adult education. The remaining expenses for teaching the class are funded from student fees.

The program most directly benefits the individuals who are enrolled in the program. Their skills and marketability are greatly enhanced. It also benefits the nursing homes and hospitals by enabling them to obtain or maintain eligibility Medicare-Medicaid.

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Salem State College (MA)

Resource Center for Business

James T. Amsler, President
Maureen Johnson, Director, Resource Center for Business

Institutional Setting

Salem State College (SSC) is a publicly supported, fully accredited, multipurpose college providing a broad range of degree programs to over 8,000 undergraduate and graduate students.

Since its founding in 1854 as Salem Normal School, it has followed a pattern of name changes similar to that of comparable colleges across the country, becoming Salem Teachers College in 1932 and Salem State College in 1960. The latest change in name also marked a major shift to degree programs other than teacher preparation. Most significant in the transition has been the development of a strong liberal arts component and the creation of a variety of specialized professional degree programs in business administration, computer science, criminal justice, nursing, and social service.

As the only four-year public college on the North Shore of Massachusetts, Salem offers its day and evening programs to a student body broadly representative of all ages and socioeconomic groups within the region. Located in Essex County, the college is surrounded by an area rich in historical and cultural traditions, interweaving the college in the heritage of its region and its growth and development.

SSC graduates work in schools, hospitals, high-technology industries, theaters, social agencies, insurance companies, banks, and federal agencies throughout the nation.

During a period of much uncertainty in many segments of higher education, Salem State College exhibits no such uncertainty and plans to continue its strong commitment to offering quality

education to all students and to satisfying their vital intellectual and professional aspirations.

Salem's broad mission is threefold: to prepare students to be competent professionals, to discover and transmit knowledge, and to provide public services to the citizens of the Commonwealth. In its effort to broaden educational opportunities for students, Salem has joined with eleven other public and private colleges on the North Shore to form the Northeast Consortium of Colleges and Universities in Massachusetts (NECCUM). NECCUM has expanded programs and facilities, fostered cooperation, and reduced duplication of institutional efforts.

As the major public institution of higher education on the North Shore, Salem State College accepts its responsibilities to serve and contribute positively not only to its student body but also to the general public within its region. The college, therefore, is committed to providing a broad spectrum of public service and public relations programs, including educational, cultural, social, and athletic events. In recent years, SSC has become a major service industry and a valuable and stable economic asset to its region.

Economic data compiled by the college's economics department documents the importance of Salem's role in the community. The college has an annual economic impact of approximately $140 million and an operating budget in excess of $30 million. It employs over 700 people, making it one of the largest employers in the region. Eighty percent of SSC's students hold part-time jobs in the area, providing a highly qualified work force at relatively low wage rates in service-related industries of the North Shore. Salem's 20,000 alumni, 95 percent of whom are from Massachusetts, stay in the state as employers, employees, taxpayers, consumers, and civic leaders.

The Program

The college's interest in serving area businesses has generated several services. The division of graduate and continuing education offers a broad spectrum of programs and courses specially designed for business. The Small Business Development Center and Service Corps of Retired Executives (SCORE) provide free services to local businesses in management, financial counseling, continuing education, information, and referrals. The college's cooperative rela-

tions and programs—professional conferences, consulting, research, and internships for area business and service organizations—number over 450.

The Resource Center for Business is a prime example of the college's efforts to serve area businesses. The center's goal is to assist in developing partnerships and designing services for business, industry, educational institutions, government agencies, and the community. Drawing from the human and physical resources of the college and private sector, the center staff designs and delivers a range of services tailored to meet the specific needs of its clients. Serving clients from multinational corporations to local educational and financial institutions to entrepreneurs, the center provides assistance in such areas as corporate finance, site and competitor analyses, child care, special events promotion, health and fitness, and research.

Since its creation in 1984, the center has raised more than $310,000 and has served more than 1,000 individuals. In order to respond in a timely manner to client needs, the center developed a Resource Bank. As a result of a survey conducted of the college's faculty, administrators, and selected consultants from the private sector, resource information was computerized and stored. Based on client need, a specialist is identified through the resource bank and asked to work with the center staff in fulfilling the client's request. The fee structure for services is based on the nature and scope of each project. Many Salem State College faculty and staff members and students provide services through the center.

As a specific example of research and information service, Essential Data for Growing Enterprises (EDGE) was designed to assist business and industry in assessing information important to the short- and long-range success of a firm. Established in February 1985, EDGE was developed jointly by the Resource Center for Business, the college library, and the Massachusetts Information Scanning Unit located at the library of the University of Massachusetts (Amherst). This effort, in which two institutions of public higher education worked cooperatively to provide a statewide research and information service to business and industry, is unique in the nation. EDGE has already served more than ninety businesses involved in health care, banking, high technology, homebased businesses, entrepreneurs, and office suppliers.

Further, in responding to the need for educating individuals to incorporate better health and fitness habits into their daily lives, the center has developed a range of health enhancement and fitness programs for area businesses and organizations. The GTE Products Corporation, Salem State College, and seventeen other area businesses and organizations have been involved in one or more health-related programs. For example, under contract with GTE, the center develops and delivers health enhancement and fitness programs to 2,700 employees located at GTE corporate headquarters and four local facilities. The fully equipped fitness center is the first of its kind on the North Shore of Massachusetts to be built by a major corporation and the first known example in New England in which an academic institution has joined with a major industry to develop a comprehensive health promotion program for employees within a corporation. From its inception, the Resource Center for Business has provided assistance to GTE in design of facilities, selection of equipment and supplies, development of physical fitness assessment procedures, and development of promotional programs to inform GTE employees of the programs and services available at the Wellness/Fitness Center.

The 6,000-square-foot facility includes state-of-the-art testing and training equipment, computer software to analyze physical fitness assessments, an area for aerobics, and locker rooms. The management of all day-to-day operations at the GTE corporate inhouse fitness facility is comprehensive and includes a health promotion needs assessment, a computerized participant entrance survey, a health risk appraisal, medical screening and evaluation, a physical fitness assessment and profile, and an individualized exercise prescription.

The need to establish the Resource Center for Business was evident, but funding the center was a problematic issue because the college had undergone a number of years of budget cuts and restraints from the state legislature. As a result of those budgetary constraints, the president of the college launched a major campaign to raise funds for the establishment of the Resource Center for Business. The campaign was both historic and significant. It was historic because it was initiated at a time when private fund raising by public colleges was virtually unheard of and because it was the college's first capital campaign. The campaign was significant be-

cause the Resource Center for Business would serve as a unique and progressive model for private/public-sector collaboration. The campaign received financial support from businesses, national foundations, local citizens, alumni, college employees, and state government.

The Resource Center for Business is also aided financially by the Salem State College Foundation, a nonprofit foundation governed by a board of prominent civic and business leaders, which works with the college to fulfill its mission. Salem is one of the first public institutions in New England to have such a foundation. The foundation raises, administers, and distributes private funds to help the college maintain and enhance a number of vital programs.

Members of the foundation have helped the college raise more than $5.5 million in funds and equipment during the past five years. In addition to money for the center, funds are provided for scholarships, equipment, academic projects, and lecture programs.

The Resource Center for Business is governed by a board of directors, consisting of representatives from the business community, state government, the college's board of trustees and foundation, and the administration and faculty. Board members' responsibilities include establishing policies, assisting in the development of programs, and serving as liaisons between the center and their respective communities. Funding for the center comes from four sources: a $335,000 endowment fund raised through the capital campaign, a state appropriation of $81,000, client fees, and in-kind contributions from the college.

The center is administered by a director, who is responsible for all administrative functions, intra- and inter-organizational coordination and collaboration, marketing, and the development and delivery of services. To foster developing partnerships within the community, the director of the center has been appointed to serve on several community boards, including the Salem Chamber of Commerce and the Massachusetts Community Education Advisory Council. With the award of a contract to the center by GTE, one full-time exercise physiologist and three full-time corporate fitness specialists have been added to the staff. Approximately thirteen additional specialists work with the center in developing and delivering its many programs.

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Southern Illinois University at Edwardsville

Center for Advanced Manufacturing and Production

Earl E. Lazerson, President

Gerald Bratsch, Director, Center for Advanced Manufacturing and Production

Institutional Setting

Southern Illinois University at Edwardsville (SIUE), approximately twenty miles north-northeast of St. Louis, Missouri, is one of four major universities providing educational, cultural, economic, and service programs to the more than 2.6 million people in the greater metropolitan St. Louis area. Focusing its educational programs primarily on the fourteen Illinois counties of southwestern Illinois, the university also maintains economic and cultural ties that cross the Mississippi River and binds the southwestern Illinois region to the city and county of St. Louis.

Commencement exercises for the first graduating class at SIUE were in June 1958. The university moved to its wooded 2,600-acre campus in 1965. Facilities in fifteen modern buildings now house forty-two undergraduate programs administered by forty-one departments in ten academic schools. The university offers degrees in engineering, sciences, education, nursing, business, dental medicine, social sciences, fine arts and communications, and humanities. Masters programs are offered in thirty-three disciplines, in addition to one professional degree (DMD), one certificate program, three specialist degrees, and one doctoral program.

The Southern Illinois University dental school is located in Alton, Illinois, fifteen miles from the Edwardsville campus. A center of SIUE is located in East St. Louis, Illinois, and continuing education programs are located in suburban St. Louis, Missouri, at Scott Air Force Base in Belleville, Illinois, and at other locations in southern Illinois.

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The fall 1986 enrollment was 10,505 full-time students, the second-largest university enrollment in the metropolitan St. Louis area. Evening and weekend programs offer curricula leading to both bachelor's and master's degrees. As a result of SIUE's metropolitan location, over 90 percent of its students can commute conveniently to the university.

SIUE is a part of the Southern Illinois University system. The system is headed by a chancellor; the president of the university is the chief executive officer. SIUE's administrative organization includes a provost and vice president, who is responsible for all academic programs; a vice president for administration; and a vice president for development and public affairs. Schools are administered by deans.

Southwestern Illinois is a major industrial center, second in the state only to Chicago in total employment in the manufacturing and production industries. There are nearly 1,000 manufacturing and production sites in southwestern Illinois; 75 percent of which lie within thirty miles of the university. Manufacturing accounts for 23 percent of all employment and 32 percent of the annual payroll in the area. These facilities provide direct employment opportunities for graduates in engineering, sciences, and business.

Major economic development in the area has occurred over the last four years, resulting in part from the development and construction of interstate highways that will complete the network surrounding the greater metropolitan St. Louis area. In 1985, new area investment, including small business start-ups, housing, offices, retail, and warehousing, totaled more than $700 million in the two counties closest to the university.

SIUE's involvement in economic development programs has been significant since the beginning of the present decade. The university was instrumental in forming the Leadership Council Southwestern Illinois, a nonprofit economic development corporation composed of Metro-East area labor, business, industrial, government, and education leaders. This group's primary goals are image enhancement and investment stimulation. Directly supporting the activities of the leadership council and other local economic development clusters are several university programs including the Southwestern Illinois Area Small Business Development Center, a Procurement Assistance Center of the SBDC, a Labor Manage-

ment Program, and a Center for Economic Education, all in the school of business; and an Environmental Resource Training Center affiliated with the school of engineering.

The Programs

One research and public service program recently begun by the university in its school of engineering is the Center for Advanced Manufacturing and Production (CAMP). This program unites the expertise of university faculty and staff with technical development and economic needs of the area's manufacturing and production industries. CAMP's goals are to:

- Foster a direct university role in the development of commercial, industrial, and service sectors
- Further the initiation and growth of new and/or advanced technology enterprises
- Serve the research development and product commercialization needs of small businesses
- Further the opportunity for job creation and new business development.

The president of SIUE, instrumental in the creation of the Leadership Council in early 1980, soon recognized an additional need for a university program focused on the manufacturing and production industry. The program would provide specialized consulting, training, technology transfer, and support programs customized to individual manufacturing site needs. As a result of his direct sponsorship, CAMP was initially chartered in early 1985 with a special grant from the State of Illinois Department of Commerce and Community Affairs (DCCA). Since FY 1985, CAMP has been an integral unit of the school of engineering, funded by the university through regular state appropriations.

In FY 1986, an adjunct to CAMP, a Technology Commercialization Center (TCC), was funded by DCCA to provide similar services to the area's inventors, entrepreneurs, and innovators. TCC assists in the commercialization of new products, ideas, and services, the majority of which are generally production related.

Both centers—CAMP and TCC—are administered by a director reporting to the dean of the school of engineering. The program director handles the majority of the CAMP clients, while an assistant director of CAMP serves the Technology Commercialization

Center clients. The director, appointed December 1985, brought thirty-three years of experience from the manufacturing industry; the Assistant Director contributed over ten years of industrial experience.

The administration of the center looks to two separate committees—the University Coordinating Committee and the Industrial Advisory Committee—for counsel and guidance of its programs in consulting, service, education, training, and technology transfer. The University Coordinating Committee consists of the four deans from engineering, business, sciences, and the graduate school. They ensure the center's integration with university policies, programs, and activities and provide assistance in securing required resources for specialized education, training, or other activities.

The Industrial Advisory Committee membership currently consists of four industrial association executive directors, three members from the Leadership Council, the SBDC, and the Center for Economic Education; and several area industrial leaders. The Industrial Advisory Committee assists the Center for Advanced Manufacturing and Production by helping identify educational, training, and technology transfer needs of the industrial organizations represented. It also disseminates information about CAMP's services to the manufacturing and production sites in the area.

The average client approaching the Center for Advanced Manufacturing and Production for assistance is a privately owned manufacturing company, with fifty employees or fewer, producing 2-3 products, serving a customer area generally within 200 miles of greater metropolitan St. Louis. A firm's needs for consulting help are generally in engineering and business. Projects to date have included cooperative research and development, innovation, technology transfer, prototype development, equipment design and development, product testing, marketing, finance, business plans, and training. In the past twelve months, the center has received over 100 requests for help and has initiated or completed over twenty-five projects involving more than thirty-five members of the faculty and staff of the university.

The Technology Commercialization Center, a division of CAMP, works with inventors, entrepreneurs, and businesses that can utilize the resources and expertise of SIUE's faculty and facilities. The skills most often required in the commercialization pro-

cess are in the faculty of the schools of business and of engineering. Services provided to clients in the technology commercialization program include prototype development, technical and business feasibility studies, business plans, marketing, and promotional programs. Inventors may obtain assistance with patent searches through computer access to patent records.

In both the CAMP and TCC programs the university has adopted strict security procedures to ensure confidentiality of ideas, products, and inventions under development.

In their first eighteen months, the CAMP and TCC programs served sixty-two clients, assisted nine companies, helped in the creation of five new companies, facilitated the introduction of eleven new products to the market, and helped develop twenty new jobs, with a potential of growing to an excess of thirty within eighteen months. Sixty-nine jobs were strengthened and saved through technology transfer, product upgrade, and production line improvements that enabled production sites to remain competitive in the market place.

The university, its faculty and students, individual businesses and industries in the area, and the economic strength of the region all benefit from CAMP and TCC activities.

University faculty and staff members gain sound practical experience through projects with business and industry that can be translated directly to the classroom for the benefit of the students. Faculty and staff members may also realize benefits through case studies, papers, presentations, and other publications in support of their professional development.

Individual businesses and industries utilize both the strengths and skills of the faculty and staff to improve their production capabilities, expand their markets, bring new products to market, and enter into on-going research and development contracts for developing new products or processes for commercialization.

Strengthening business and industry results in more secure jobs and new jobs in the area, thus enhancing the overall economic position of the region. A strong economic development program results in new companies, new businesses, new families, and potential new students for the university. Finally, economic development growth in the region provides career opportunities for graduates of SIUE.

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University of Northern Iowa

External Services Division, School of Business

Constantine W. Curris, President
Susan Chilcott, Director, Office of Public Relations
Al Pelham, Director, Small Business Development Center
David D. Wheelock, Associate Director, Small Business Development Center

Institutional Setting

The University of Northern Iowa (UNI) was established in 1876 as the Iowa State Normal School. The institution was renamed the Iowa State Teachers College in 1909 and, under this title, attained a national reputation and status as a leading institution in teacher education. In 1961 the name was changed to the State College of Iowa, and degree programs were added for those not planning to teach. The name change to the University of Northern Iowa took effect in 1967.

UNI emphasizes outstanding undergraduate education with complementary graduate programs at the master's, specialist's, and doctoral levels. Five conventional baccalaureate degrees are offered: Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Music, Bachelor of Science, and Bachelor of Technology. An external degree, the Bachelor of Liberal Studies, is also available. The university offers seven graduate degrees: Master of Arts, Master of Arts in Education, Master of Business Administration, Master of Music, sixth-year Specialist and Specialist in Education degrees, Doctor of Industrial Technology, and Doctor of Education.

UNI has grown from its 1876 original campus site of forty acres with one building to over forty principal buildings on a 740-acre campus. The faculty consists of about 580 members; administrators and support staff number approximately 800. Northern Iowa has an enrollment of 11,500. In fall 1986, approximately 3,200 of the students came from the metropolitan area.

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The academic structure of the university includes: a college of education, with eight instructional units and 2,190 students; college of humanities and fine arts, with eight academic units and 1,604 students; college of natural sciences, composed of six departments with 1,493 students; college of social and behavioral sciences, with seven departments and 1,400 students; and a school of business, containing five departments with 3,178 students. The balance of students have not declared a major nor affiliated with a specific college.

Cedar Falls is a pleasant and historic college town with tree-lined neighborhoods. Along with adjacent Waterloo, it is part of a major metropolitan area with a population of more than 110,000. There are a variety of large private employers in the metropolitan area including Deere and Company, Century Life Insurance, Viking Pump, Control-O-Fax, Waterloo Industries, GMAC, and Chamberlain Manufacturing.

The University of Northern Iowa, through the External Services Divison of its school of business, has made a variety of contributions to the community and state business economy during 1986, including: (1) providing business counseling for 1,700 small businesses leading to the creation of over 150 jobs from new business formations and 260 jobs from existing private businesses; and (2) contributing to the organizational productivity of firms in the private and public sectors by developing and conducting over 50 executive and managerial training programs. Some 2,700 people have been served in the process.

Further, representatives from the university community sit on boards for chambers of commerce, the local industrial development associations, and several economic development organizational organizations. The school of business provides office space for one of the community's major economic development groups.

The Program

In 1982, the External Services Division was created in the school of business to develop resources that could help businesses and communities throughout Iowa become more productive and adaptive in today's competitive environment. Based on the belief that the university and school of business should be an active participant, rather than an observer, by contributing to the business

expansion and job creation process for Iowa, the External Services Division is committed to assisting with the economic development of the state.

The division serves as an economic development resource center for firms, organizations, and individuals in the private and public sectors. Assistance takes the form of training and development programs for executives, managers, and supervisors; business counseling for small business firms and for individuals who contemplate forming a small business; and education and counseling assistance to individuals and groups concerned with economic development at the local, regional, and state levels.

The primary resource for providing this assistance is the staff of the division, composed of former corporate executives who are members of the UNI school of business faculty. A secondary resource includes other business faculty members, professionals from other universities and businesses, and members of professional organizations who volunteer their time and expertise.

The External Services Division consists of four units: the Management Development Center, Small Business Development Center, Small Business Institute, and Economic Development Resources Group. The Management Development Center and the Economic Development Resources Group are funded by the school of business and by revenues generated from various programs. Funding for the Small Business Development Center and the Small Business Institute comes from federal and state grants.

In conjunction with the university's continuing education division, the Management Development Center creates and provides contemporary business programs for executive, managerial, and supervisory personnel in the profit and nonprofit sectors. Programs are offered with content and atmosphere geared to successful application to the real world of business. Presenters include the UNI faculty, with the core resource group from the school of business, and, as appropriate, presenters from other universities, industry associations, and business firms.

The Small Business Development Center and the Small Business Institute provide business and technical assistance to the small business community. The center serves as the focal point for linking the resources of the UNI faculty with outside professional consultants and students in order to provide counseling to resolve

problems and identify opportunities for small businesses in such areas as marketing, accounting, finance, information management, and organizational development. Clients benefit from top-quality assistance in solving critical problems of their businesses. Ultimately, there is benefit to all, for business success, reduced business failures, and job creation provide increased revenue in the economy.

The Economic Development Resources Group provides counseling and educational assistance to individuals concerned with economic development activities at the local, regional, and state levels. Educational assistance is provided through seminars and workshops at UNI and other locations throughout the state. Counseling provides assistance to communities and state agencies in developing plans and programs to retain current businesses as well as to encourage the establishment or relocation of new firms. Assistance in these activities is provided by UNI faculty members, professional economic developers, and the support staff for the resources group.

The UNI New Venture Forum is a professional counseling service for economic developers and private business people who are planning new ventures and major economic development projects. The forum is designed to help reduce or eliminate the barriers and financial risks associated with new venture start-ups. The forum offers a review board composed of business professionals, financial experts, and others for new businesses and economic development ventures at the local and state levels. The goal is to improve the success rate for new ventures, thus leading to job creation and business expansion.

The UNI External Services Division continues to be an active and expanding organization that interacts with the public and private sectors to assist in economic development. At UNI, through the outreach of the division, benefits have accrued to both the university and the state.

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Western Washington University

Examples of Direct Delivery of Services

G. Robert Ross, President
Stephen Kurtz, Director of Public Information

Institutional Setting

Western Washington University (WWU) occupies a hillside in Bellingham overlooking the city, Bellingham Bay, and many of Puget Sound's 172 San Juan Islands. With its architectural blend of the traditional and the modern, the university reflects the majestic beauty of the Pacific Northwest.

The university was founded in 1893 as a state normal school and was renamed Western Washington College of Education in 1937. It was designated a state college by the legislature in 1961 and officially became a regional university in September 1977.

With growth, the university acquired the specialized faculty and facilities vital to its multipurpose mission. To capitalize on these advantages without losing the strengths of a small, close-knit community, it added new academic divisions.

The first of these—Fairhaven College—enrolled its initial freshman class of 200 students in fall 1968. The college has its own faculty and village-style campus. Fairhaven students complete about half their work at Fairhaven—which features independent study—and half in the specialized departments available on the university campus. Students under certain circumstances may, with faculty advisement, design their own majors.

Other divisions are arts and sciences, fine and performing arts, business and economics, education, the graduate school, and Huxley College of Environmental Studies. WWU offers more than eighty bachelor's and twenty master's degree programs through its regular academic program, while the center for university extension provides a variety of contemporary courses designed for people of all ages. Fall 1986 student enrollment was 9,398.

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WWU is deeply involved in educational exchanges with the People's Republic of China (PRC) and has contracts with Inner Mongolia University, Chongqing University in Sichuan Province, Southwest Asia University in Sichuan, and Beijing Foreign Languages University in Beijing. Relations are being developed with Shanghai Institute of International Studies and with Liaoning Science and Technology Exchange Center in North China.

The China Language Program has been funded by the state legislature to teach English to coprofessionals in China. Summer Study at Southwest China Teacher's University is a program for early preschool and primary school educators. International Trade Internships are being planned with major Chinese trading companies for students from the WWU college of business and economics. College Faculty Quarter in China is a project that would place faculty from any of the state university community colleges and four-year schools in a university or institute in China for study and research. Industrial and Technical Internships are being discussed with industrial leaders in North China.

The goal of these programs is to provide undergraduates at WWU and other state universities an opportunity to visit and study in China at a price that would make the experience widely available (about $2,000 for six weeks, including international air fare). Through the projects, faculty members at WWU and other state educational institutions would have an opportunity for professional study and research in their disciplines in China and the chance to work with coprofessionals there. Another goal is to bring professionals, teachers, and administrators from China to study at WWU and other state schools, as appropriate, for up to two years.

WWU has also developed a faculty and student exchange with Asia University in Tokyo, Japan, and a student-only exchange program with Tsuda University in Tokyo. The Nippon Business Institute is being developed jointly with nearby Everett Community College.

Although WWU has been relatively small in size through most of its history, the school has evolved into a sophisticated, multipurpose institution. As the university has grown, it has added many specialized facilities and faculty members essential to a sound education in the arts and sciences. But as much as the university welcomes growth and diversification, it continues to stress close stu-

dent-faculty relationships like those of Fairhaven and Huxley colleges. Many students live in campus residence halls that are largely self-governed (within a framework of University policy).

Bellingham, a city of 46,000, is twenty-two miles from the Canadian border, fifty-five miles south of Vancouver, B.C., and ninety miles north of Seattle. It is built around Bellingham Bay, one of the finest natural harbors on the Pacific Coast. As such, it is an important domestic and foreign shipping port for logs, pulp, aluminum, paper, petroleum products, dairy and poultry products, and frozen food. East of Bellingham lie the twelve-mile-long Lake Whatcom and the northern reaches of the Cascades, with 10,778-foot Mount Baker as the centerpiece. The Mount Baker ski area is an hour's drive from the campus. Bellingham has nineteen major parks and 1,476 acres of developed parks. The natural surroundings make the area a haven for boating, swimming, skiing, and many other outdoor recreational endeavors. There is a high interest in community theater, art, and music. Modern freeways bring Seattle and Vancouver, B.C. within easy driving distance.

Bellingham began as a lumber mill town in 1852. Known then as Whatcom, the community survived a short-lived gold rush the first ten years. To this day, two remnants of the gold fever remain: the oldest brick building in the state and a frame house built by the commander of Fort Bellingham, George Pickett, later of Gettysburg fame. Three other communities of the area—Fairhaven, Sehome, and New Whatcom—emerged side by side with Whatcom. The little bay towns consolidated in 1904 under the compromise name of Bellingham, which was given to the bay in 1792 by the early day explorer George Vancouver.

Though the economy was based for many years on lumber, coal, and salmon-canning, the community has seen these industries all but pass from the local scene. They have been replaced by nearby aluminum and oil-refining industries and combined with the manufacture of pulp and paper, boats and cement, as well as commercial fishing and processing and frozen food processing.

The Programs

WWU has several examples of direct delivery of services to corporations. The director of WWU's VICOED (Visual Communications Education) is working with Jump Ahead Software of Modesto,

California, to develop training material for word processing-typesetting interfacing software. The material in progress includes a self-instructional videotape as well as a manual.

The director of the electronic engineering technology program works as a consultant for Team Whatcom and Team Washington to promote business opportunities both locally and statewide. He recently returned from a trip to Japan as a member of the governor's task force seeking location of Japanese firms in Washington.

The director of the Vehicle Research Institute (VRI) works with Viking Performance Co. and has developed the Viking III car, which is a prototype for a production auto. He is also working with Fiba Canning, Inc., of Ontario, Canada, in the conversion of engines to natural gas. These engines are to be used in buses.

The John Fluke Manufacturing Co. of Everett, Washington, has donated a $13,000 data logger to Western's plastics program which will be interfaced with other Fluke equipment. The results of this integration will then be fed back to the Fluke Company to help make their equipment more efficient.

Transformer CAD has donated digitizer and programs worth approximately $20,000 to the WWU industrial design program and the computer center. This equipment is to be tested on problems relative to innovative uses applied to industrial design.

The IBM Corporation has worked with WWU faculty members and students to develop demonstration packages and author language for their venture in the IBM PC Courseware market. In the process, IBM adopted the language IBM PILOT, which was developed and modified at WWU specifically for the company.

Western's exercise physiology program is providing an exercise and fitness program for employees of Georgia-Pacific Corporation's Bellingham plant. G-P employees visit the campus for testing and development of personal exercise and fitness programs. ARCO petroleum refinery at nearby Ferndale was a previous user.

WWU's college of business and economics each year brings in some of the nation's foremost economists and economic forecasters to participate in the Intalco Distinguished Lecture Series. The series draws its audience from the top corporate and business leaders in Northwest Washington and is always filled to capacity. The lectures are underwritten through a grant from Intalco Aluminum

Corporation, which has one of the nation's most modern and automated aluminum plants.

The Small Business Development Center on campus regularly provides consulting services and training workshops for owners and potential owners of small businesses in Northwest Washington.

Western's career planning and placement center works daily with Washington corporations, business, and industry to place WWU students into internships with various companies.

The office of international programs regularly provides interpreting and translating services in many languages to the regional business community.

Under its University Donation Program, AT&T has donated new computer equipment worth $90,000 to Western Washington University's computer science department. The donation will provide nearly all the equipment for an upper division and graduate computer science laboratory centered on the UNIX operating system originally developed by AT&T but now used by a large number of computer makers. The equipment consists of two AT&T 3B2/310 time-sharing minicomputers, each capable of supporting a dozen terminal work stations; two bit-mapped video graphics terminals; four AT&T UNIX personal computers to be used as work stations; and four printers. WWU will add the appropriate number of video terminals to complete the laboratory. The equipment will be installed for use by the first students in the university's new master degree program in computer science.

The Center for Economic and Business Research is a newly formed extension of the college of business and economics. It is staffed by a half-time director, who is a faculty member. The center assists the college and the university by providing a focus for research activities. Research projects are carried out by the director and by appropriate other faculty members as funding becomes available. In this sense, it is an "expert-based" research center. Students have many opportunities to participate in the center's activities.

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Westfield State College (MA)

Examples of Direct Delivery of Services

Irving H. Buchen, President
Garreth J. Lynch, Vice President, Administration

Institutional Setting

Founded in 1838 as one of the first two normal schools in America, what is now Westfield State College (WSC) was guided in its formative states by such luminaries as Horace Mann and Henry Wadsworth Longfellow. In 1928, a three-year curriculum was pioneered, and by 1930 a four-year degree program was firmly established. By the end of its first hundred years, the college had graduated over 4,000 students.

WSC has a scenic campus in western Massachusetts in the foothills of the Berkshires. Its 227 acres include fifteen modern brick buildings set in a magnificent stand of large pines.

Today, Westfield is a comprehensive, four-year, multipurpose institution with nearly 3,000 undergraduate students. Its division of graduate studies and continuing education serves many additional students of all ages and interests.

The mission of the college continues to focus on the needs of the citizenry of the Commonwealth. It still provides a thorough foundation for all programs in the liberal arts. Today, its graduates are skilled in such contemporary areas as criminal justice and computer science, such traditional offerings as art and music, and such socially responsive areas as economics, business, and media communications.

The Programs

Linkages between WSC and the corporate community have been forged extensively in recent years, reconfirming that a college can be a source of practical, not just academic, expertise and assis-

tance and that learning is not exclusive to the classroom. The college has developed a variety of cooperative relationships with business and industry, formally and informally, which provide up-to-date, creative efforts to meet the changing needs of education and employment.

Westfield State College provides programming for the private sector through its Small Business Institute activity. Personalized management assistance is offered to area businesses free of charge. Through the Small Business Institute, senior business management students are provided practical application experience as the cooperative business establishments receive the guidance and consultive services of trained professionals.

IMPACT (Institute for Management Practice and Accounting Training) represents a business service program benefiting Western Massachusetts business and accounting professionals. This joint venture between the college and community focuses on topics of management, marketing, systems, accounting, finance, and labor.

WSC has introduced a program to retrain unemployed teachers in new teaching careers in mathematics and science. The Math/Science Teacher Retraining Program was one of eleven programs in the country to receive an American Association of Colleges for Teacher Education (AACTE) award. The program was featured in a *Newsweek* article about the national shortage of math and science teachers. A grant from GTE helps underwrite the costs of continuing the program.

The Student Internship Program is widely accepted as a link between the classroom and market place. The program exposes students to new and current applications of their training—a definite asset in today's market place. Regional, national, and international placements are available, including programs at the Westfield Chamber of Commerce, Springfield Museum, Barnes Municipal Airport, the Bank of Boston, and Digital Corporation. Students have also interned in Sydney, Australia and in Ireland. Several students computerized the personnel records for the City of Westfield. Two interns assisted in preparation of a Five-Year Economic Recovery Program at Barnes Municipal Airport. Others prepared the airport's 1984 operating budget and a freight distribution study for the Pioneer Valley.

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A program entitled Education and the Occupational-Industrial Environment is cosponsored by Northeast Industry Education Labor Alliance and WSC. The program is designed to help educators improve their understanding of the world of work. It helps teachers, administrators, and guidance counselors at elementary and secondary schools broaden their understanding of the business environment through observations at companies and businesses.

A cooperative relationship has developed between WSC and Digital Equipment Corporation, which has generously donated a new Digital VAX 11/750 performance computer system to the college. The system serves students majoring in computer science and those interested in mathematics and scientific applications. The college provides facilities for two- and three-day management institutes for DEC personnel. WSC faculty members have taught computer science courses at the Digital Westfield plant. The curriculum of the department of computer and information science is closely related to the curriculum developed for the Massachusetts State College System by DEC. Continuing education academic programs in computer science focus on the problems experienced with uses of computers in the local industry.

The college works closely with local area businesses and private corporations to determine the occupations in current demand and to develop a variety of programs to meet that demand. Some companies work directly with the division of continuing education to create courses at the college or inhouse at the company. Numerous workshops and conferences are offered by the division in such diverse areas as occupational stress and burnout, food and resource conservation and development, or development of the emerging wine industry in New England.

WSC's involvement in the civic and economic well-being of the area extends beyond the immediate neighborhood. Representatives of the college participate in the Western Massachusetts Economic Development Conference to identify ways in which resources at the college can benefit local business and industry and provide a vehicle for regional cooperation.

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Part 4

Facilities and Equipment Sharing

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Morehead State University (KY)

Mountaintop Agricultural Complex

C. Nelson Grote, President
Morris Norfleet, Special Consultant to the President

Institutional Setting

The Morehead State University (MSU) 500-acre campus is bordered on the north by the gently rolling foothills of the Daniel Boone National Forest. To the south lies the shopping district of Morehead, a thriving community of about 10,000 midway between Lexington and Ashland, Kentucky.

Founded in 1922, Morehead State University has expanded and developed over the last sixty-five years into a multipurpose regional institution of higher education. It has a long tradition of service to the people of the Commonwealth. MSU is a regional university governed by a ten-member board of regents, eight of whom are appointed by the governor, one elected by the faculty, and one by the student body.

The university's educational facilities include more than fifty major structures in a variety of contemporary and traditional architectural styles, a 320-acre experimental farm, a nine-hole golf course and a fifty acre outdoor learning center at Cave Run Lake. The university's physical plant represents an investment of some $100 million.

With a coeducational enrollment of approximately 5,800 and a teaching faculty of 278, the university offers ninety-six undergraduate degree programs, two certificate programs, and ten preprofessional programs. Its diverse academic and extracurricular life draws students from throughout the United States and several foreign countries.

Approximately 48 percent of MSU graduates have degrees in teacher education, with business and economics constituting the

second largest major. Approximately 60 percent of local high school graduating seniors who attend college select MSU.

Because the small town of Morehead has no industry requiring a college degree, the only significant local employment opportunities for graduates are in education. MSU educates approximately 80 percent of the public school educators for the schools of eastern Kentucky. The university, with its 900 full-time employees, is the largest single employer of the city and county. The major industries in the immediate vicinity of the university are the Cowden Manufacturing Company, with 150 employees, and the Seal Master Corporation, with 233.

The Program

Today's agriculture is a complex, but highly developed, technical industry. New technical and innovative methods are developed daily, presenting new and challenging opportunities in agriculture. MSU's project is designed to make post-mining soils productive for crops and livestock.

It costs more to reclaim surface-mined land than even the best agricultural land is worth; the expenditure for agriculture alone cannot be justified. However, to protect the future capacity to produce food, every opportunity must be taken to develop potential prime agricultural land. The ability of a nation to produce food and fiber depends on the availability of its natural resources, especially soil and water, and on appropriate technologies. MSU's Mountaintop Agricultural Complex presents an opportunity to redevelop land and to develop new techniques necessary for its reclamation and management.

August 1982 marked the beginning of the Mountaintop Agricultural Complex, a joint research and demonstration project of Martiki Coal Corporation and MSU's department of agriculture and natural resources. The Pocahontas Development Corporation joined the effort within a year of its inception, thus developing a three-way partnership. This united effort was to determine the feasibility of using reclaimed mountaintop land for agricultural production.

The initial development of the complex was financed by contributions from Martiki and Pocahontas Corporations. A fifteen-year agreement authorized MSU's department of agriculture and

natural resources to plan and manage the Mountaintop Agricultural Complex.

In the early planning stage of the complex, it was determined that the major emphasis would be on developing the primitive soil through the use of animal manure. Though a secondary consideration, the income generated by animal enterprises provided for the maintenance and expansion of the project. Swine and poultry enterprises were selected for manure and income generation; beef cattle and sheep units were planned to utilize the pasture and hay produced with the manure generated. The project is, therefore, self-supporting.

The swine complex, designed for 240 sows, is in full production. The unit produces between 4,500-4,700 pigs each year, half of which are sold as feeder pigs with the rest finished to market weight. The poultry enterprise, housed in a high-rise poultry unit containing 82,000 caged layers, has completed its first year of full production.

Since the inception of the project, over 200 acres of hay have been established and harvested. Approximately 120 acres have been fenced for pasture. The pasture contains good stands of fescue, orchard grass, alfalfa and red clover. It currently supports over fifty head of beef cows and calves and is expected to grow to 100 head by 1990. A sheep unit is also planned for the complex as additional acreage is developed. Research is underway to determine the maximum grazing capacity of the pasture fields.

Trials of vegetable crops and row crops are also underway. Plantings of forest and Christmas tree seedlings were made on the steep outslopes in 1984. A trial orchard and vineyard are planned when a suitable site is developed.

MSU recognizes the need for research to determine the best methods of building topsoil to support plant growth. The agriculture faculty is working diligently to develop a model farming operation that would allow thousands of surface-mined acres throughout eastern Kentucky to be used for future agricultural purposes, thus establishing a new agricultural frontier.

The experience at the Mountaintop Complex may allow farmers and landowners to develop agriculturally productive land from previously nonproductive land and to develop an agricultural industry after the minerals have been removed from the land through

mining. Martiki and Pocahontas are to be commended for their efforts in financing a model project designed to develop the best methods of reclaiming land for useful production.

In the inception of the project, all planning and development were coordinated through the president's office. As the project developed, an advisory committee was appointed jointly by the president of the university, Martiki Coal Corporation, and Pocahontas Development Corporation to oversee the development of the program. The advisory committee includes three members from Martiki, three from Pocahontas, and two from MSU.

University responsibility for the project was assigned to the dean of the college of applied sciences and technology and to the staff of the department of agriculture and natural resources. A project manager was designated.

The program benefits the Martiki Coal Corporation and Pocahontas Development Corporation by providing an opportunity to redevelop valuable land and an economic unit. It provides an opportunity to reclaim land for a useful, productive function at a cost lower than that for the more frequently required process of restoration of the land to its original contour.

The university benefits as it fulfills its role of regional service; forms a valued and productive partnership two major corporations; develops a research and demonstration laboratory for other mining operations to emulate; provides practical experience and employment for students; and involves faculty members in a research and development project that contributes much to their professional development and their classroom teaching.

The complex brings into sharp focus the many thousands of acres of premium land being created in Kentucky and elsewhere via the mining method known as "mountaintop removal, valley fill." There are currently some 137 such mining operations extant in Kentucky alone. As a direct result of this mining method, Martiki will be creating more than 4,000 acres of gently rolling land above the flood plains of Martin County, Kentucky. The potential use of this land, as well as the many thousands of other acres being created throughout Appalachia's highlands via this method of mining, is simply unlimited. In addition to agricultural production, uses for industry, housing, air transportation, and recreation can be demonstrated for this program.

Should other institutions contemplate developing similar programs, certain elements would help ensure success. It is essential that a partnership of the corporate world and the university be established in such a way as to help ensure the fullest possible development of each. The university must ensure that the project reflects the overall objectives of the university and will enhance the academic programs.

In a project of the magnitude of MSU's complex, it is imperative that a contract be developed that clearly defines the purposes, roles, and responsibilities for the administrative, financial, and programmatic elements.

Finally, a system must be developed to monitor the progress of the project. This is particularly essential if the project is controversial, as has been the case with surface mining of coal.

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Northern Kentucky University

Foundation Research and Technology Park

Leon E. Boothe, President
Ralph A. Tesseneer, Jr., Special Assistant to the President
President, NKU Foundation

Institutional Setting

Situated on 300 wooded acres just six miles beyond the southern periphery of Cincinnati, Ohio, Northern Kentucky University (NKU) is surrounded by one of the fastest-growing areas in Kentucky. Its location, including close proximity to Greater Cincinnati and Southern Indiana, affords the university access to numerous economic, technological, and cultural resources that offer great opportunities for shaping cooperative relationships with the corporate community.

NKU

Northern Kentucky University has celebrated its sixteenth year as a higher education institution. Upon reaching this anniversary, NKU had evolved from a community college, the Northern Center of the University of Kentucky, to a comprehensive degree-granting institution, Northern Kentucky State College, in 1970, that offered the Bachelor of Arts, Science, and Fine Arts degrees and the Master's in Education. In 1971 Northern Kentucky State College merged with the Simon P. Chase College of Law, which had been located and operating as an evening law school in Cincinnati since 1893. In 1976, it became Northern Kentucky University, and has since added the Master of Business Administration and a number of cooperative programs with the University of Kentucky, the University of Cincinnati, the University of Louisville, and Kentucky State University. In 1986-87, NKU enrolled 4,440 undergraduates, 3,407 part-time undergraduates, and 1,163 graduate students. Its faculty now consists of more than 284 instructors.

A recent restructuring of the organization of NKU's academic programs has resulted in a refining of NKU's academic departments and degree programs. At this time they have been formed into five colleges: law (the University's only professional school), arts and sciences, business, professional studies, and University College. Each is administered by a dean and the appropriate department chairpersons.

All university programs are administered under the authority of the president. Reporting to the president are a provost, vice president for university affairs, vice president for student affairs, vice president for university relations/development, director of budget and planning, the university counsel-attorney. and a special assistant to the president, who also serves as president of the Northern Kentucky University Foundation.

With this organization, the university encourages the deans and some of the faculty to seek external sources of support for their programs. Each of the colleges has been encouraged and assisted by the Northern Kentucky University Foundation, the official arm of the university for the generation of private funds through gifts and/or development.

The Greater Cincinnati/Northern Kentucky area contains well over 1.5 million citizens and a great variety of businesses and industries that serve as potential employers of NKU's graduates and pro-

viders of external resources to the university. Corporations that have their corporate headquarters in Cincinnati and Northern Kentucky include Procter & Gamble, The Kroger Company, Cincinnati Milacron, Cincinnati Bell, and Griffin Industries.

The Northern Kentucky area, of which the city of Highland Heights is one of forty separate municipalities, is a home for almost 650 businesses. Of these, fifty employ more than 100 people. The regional environment varies widely from urban centers and their suburbs in the immediate vicinity of Cincinnati, Ohio, to the more rural areas of Kentucky.

In the past, Cincinnati and Northern Kentucky were a manufacturing center. Today, 50 percent of the area's employment is in manufacturing, mostly durable goods. Light manufacturing and service-related industries, however, have grown considerably in the past two decades. Major corporations employing several hundred or more persons in the Greater Cincinnati/Northern Kentucky area include Procter & Gamble, The Kroger Company, Cincinnati Milacron, Cincinnati Bell, Griffin Industries, Mazak, Levi Strauss, Square D, Litton, Inc., and others.

Until the beginning of the 1980s, NKU's involvement with the corporate community was minimal. Since that time, corporate/college relations programs have been initiated by the university through its foundation.

The Program

Founded in May 1977, the Northern Kentucky University Foundation, Inc. evolved from the Northern Kentucky State College Research and Development Foundation, a domestic, nonstock, nonprofit corporation formed in 1970. The purpose of the original Foundation was to provide general and specific services and materials necessary or desirable for the growth and development of Northern Kentucky State College or its successor institution.

With the restructuring in 1977, officers were named to work with the newly formed board to implement the first phase of the reorganization program. Early the following year, administration of the office of alumni affairs was transferred to the foundation officers and board members.

In June 1980, property valued at $5,000 in Rabbit Hash, Kentucky, was given to the foundation. Later in 1980, sixty-five acres of

land adjacent to the university—called the Schoulties property—were purchased. This was the first property bought for the Foundation Research and Technology Park. Subsequent purchases have brought the property total for the Research Park to seventy-five acres. The master plan for the research park includes research facilities, an office building, and a conference center with a hotel. It is hoped that the hotel will be a completed in 1988. The foundation is attempting to secure lessees for seventy-five acres. To qualify as a lessee, companies must have plans for research that the Foundation's board believes would be compatible with the university's goal. The companies would pay low rent on the leased land, but at the end of the lease their buildings would become the property of the foundation. At that time, the companies will lease the land and the buildings from the foundation. The money generated from the new leases will support the university's endowment program.

To date, the Kroger Company has been the only company to take advantage of the low rental rate. It built a $10-million-dollar research and development laboratory on 9.5 acres of the park in 1982. About 110 persons are employed in the laboratories. Northern Kentucky University students participate in cooperative programs at the facility, and some Kroger employees work as adjunct professors at the university.

The foundation felt that building a research and technology park would be beneficial both to the university and to the companies that develop there. As a developing research university, NKU would be able to train its coop students at the companies' research facilities. At the same time, the companies could use the university's research facilities and benefit from the low rent for the length of their lease agreement. Finally, the university will financially benefit from the lease agreements. In 60-70 years, the research park, office building, conference center, hotel, and other buildings will be completed and assigned to the foundation. At that time, the park will constitute a substantial portion of the university's endowment program.

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University of Wisconsin-Green Bay

Research on Waste Recovery at FEECO International

David L. Outcalt, Chancellor
Betty D. Brown, Specialist, University Communications

Institutional Setting

The University of Wisconsin-Green Bay (UWGB), established in 1965 by the Wisconsin legislature, began operation as a degree-granting institution in September 1968 in facilities of an existing freshman-sophomore campus of the University of Wisconsin. A year later, classes opened in the first three buildings of a new campus located on a 700-acre, wooded site five miles northeast of the city center and overlooking the waters of Green Bay.

The university operates under a mandate from the UW system regents to offer "a focused, institutionwide academic program that is substantially unique in both goals and organization," emphasizing interdisciplinary, problem-centered study of humans in their environments. The special mission of the university includes providing strong liberal arts programs as the foundation for all its degrees, and serving as a center for research applied to regional needs and problems.

The chancellor is the chief officer of the university and faculty. Other senior administrators are the vice chancellor for academic affairs, assisted in the administration of the academic program by a dean of humanities, arts and social sciences and a dean of natural sciences and mathematics; the associate chancellor, who has oversight of university relations, student services, learning resources, computer services, and intercollegiate athletics; and an assistant chancellor for fiscal and administrative services, responsible for physical plant and facilities management, accounting, institutional services, and personnel.

In 1985-86, the university enrolled 3,126 full-time and 1,404 part-time undergraduates, 421 students in extended degree programs (through independent learning contracts), and 532 graduate students. The instructional staff comprises 181 full-time faculty members and lecturers organized into nine interdisciplinary administrative units, known as concentrations, and several professional programs. The university's more than fifty programs of undergraduate study include twenty-one majors in disciplines of humanities and arts, natural sciences, and mathematics, and thirteen interdisciplinary majors. Teacher certification is available at all levels, preschool through senior high, and preprofessional programs prepare students for entry into graduate and professional schools.

Graduate work leading to the Master of Science is offered in community human services, environmental science and policy, and administrative science. Master's degrees in four programs of education and educational administration and the Master of Business Administration can be completed at Green Bay in cooperation with other UW campuses holding entitlement for the degrees. Other professional programs include nursing, social services, and education.

Of an undergraduate enrollment of 4,530 in fall 1985, 1,773 students—almost 40 percent—registered in business programs, including accounting. About 13 percent majored in social sciences, 9 percent in the humanities and arts, and 7 percent in natural sciences and mathematics. Twenty-three percent were undeclared majors, and 12 percent were not seeking degrees.

Green Bay, with a 1985 population of 92,270, is Wisconsin's third-largest city and the dominant retail center of Northeastern Wisconsin and the Upper Peninsula of Michigan. It is located in Brown County, the second fastest-growing area in the state with a current population estimated at 185,261. The principal industry is paper making, and eleven mills of varying size are located in the county. Other major industries are the processing of food and kindred products, manufacturing of lumber and wood products, fabricating metal products and machinery, and printing and publishing. Local manufacturing industries employ 28 percent of the working population, trade accounts for 25 percent, services 23 percent, and government 13 percent. The rate of unemployment in Brown County is 6.8 percent, compared with 8.3 percent for the state.

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The university—although a comparative newcomer to a city that recently celebrated its 350th birthday—has enjoyed a close and rewarding relationship with its community from the very beginning. Since 1973, when the Founders Association was organized, individual and corporate members have contributed almost $3 million in private gifts for projects and services for which state funding is not available, including merit scholarships, teaching improvement grants, admissions programs, and construction of the arboretum that surrounds the campus. The university's first capital funds campaign, recently concluded, exceeded its $2.2-million goal. Members of the corporate community have played vital leadership roles in the Founders Association and in the capital campaign.

In return, UWGB has been an educational, cultural, and economic asset to Green Bay. Fully 50 percent of those 7,600 individuals who have completed degrees at UW-Green Bay during the eighteen years of its existence have become employed in business and industry in Brown County or contiguous counties of the Northeast Wisconsin community. The university is a major factor in the local economy: with approximately 600 employees, it ranks eighteenth among employers in Green Bay and Brown County and contributes more than $37 million annually to the local economy through purchases of consumer goods and services by university-affiliated individuals and families, university purchases, and contract construction.

The Program

Under a 1983 agreement with FEECO International, the UW-Green Bay investigated the recycling of industrial process wastes to recover energy and to develop carriers for fertilizer, specifically designed for slow nutrient release in hostile environments. The research involved developing a briquetting process to reform such wastes as wood chips and paper mill sludge into potentially recoverable products. FEECO, located within a mile of the university, specializes in the manufacture of mixing, drying, and agglomeration equipment for the industries handling fertilizers and other bulk materials. The firm agreed to provide space, at no charge, for storage and operation of a pilot briquetting plant and associated laboratory equipment. Additionally, FEECO provided utility hook-

ups and assistance in making the plant operational. Since the installation was completed in 1983, FEECO has also borne the normal cost of utilities. At the university, the project has required the use only of existing facilities: a campus greenhouse, an auto-analyzer for leachate tests, and some equipment in a soils laboratory.

Starting in the fall of 1983, university scientists developed a process for forming briquettes using mixtures of urea and lime kiln dust, urea and gypsum, sludge from a paper mill waste water treatment facility plus a mixed fertilizer, and paper mill sludge plus wood chip fines with and without fertilizers. The researchers varied moisture content to provide optimum briquette strength and durability. Tests of the briquettes have included short-term bioassay of corn grown in sand culture containing briquettes formed with (a) mixtures of paper mill sludge and fertilizer or (b) with fertilizer alone. Dry weights and growth weights of the corn have been determined. For some assays, the researchers collected leachate from the cultures throughout the growth period and analyzed it for nutrient content. Fertilizer-to-sludge ratios and briquette surface-to-volume ratios were evaluated to determine the optimum combination for a slow-release nutrient carrier.

The program originated with a gift to UWGB of the "Reclaform" process for reclaiming waste carbon and iron-bearing particles. Presented by the Berwind Corporation of Philadelphia, the gift included a ten-year record of the development of the process, a complete pilot plant, and laboratory support equipment. In the Reclaform process, finely divided iron and/or carbon-bearing materials are blended using an asphalt or pitch blender and bonded under pressure to form a briquette. The briquette is then cured to withstand extensive handling and extreme heat without disintegrating. The principal use for the process was for recovery of wastes generated in the coking process. FEECO was then approached about the project and agreements were reached.

Less than a year after the briquetting facility was installed at FEECO, funds for the research were provided by a two-year, $98,000 grant from the Technology Development Fund (TDF), a program of the Wisconsin Department of Development. Established in the state's 1983-85 budget, the $2 million program supports research and development of new products and processes by consortia of Wisconsin businesses and higher education.

Except for grants processing by the university business office, administration of the program was undertaken by a director and co-director working an estimated 30 percent and 20 percent, respectively, of their annual working time.

Funding by the Technology Development Fund ended in December 1986; however, the relationship with FEECO is expected to continue indefinitely. Another major corporation with headquarters in Green Bay has expressed interest in supporting aspects of the research, and is near concluding a formal agreement with the university.

An important spin-off from the FEECO research was the awarding, in October 1986, of a second Technology Development Fund grant of $45,000 to the university and MEI Systems, a firm of consulting engineers in Appleton, Wisconsin. MEI Systems, which holds patents for a process for recovery of spent sulfite liquors produced in a paper-making process, hopes to verify predictions of the patent or to discover a means of modifying the process to make it economically feasible. University faculty experts in this area will seek to determine the feasibility of recovering inorganic compounds in a form that can be reused in the pulping process.

Students and faculty members who have gained new familiarity with sophisticated laboratory equipment and expanded their research experience are obvious beneficiaries of the waste recovery project. For both, on-going studies also complement and enrich undergraduate courses and graduate work offered by the university in waste management and resource recovery. As one in a continuing stream of faculty research efforts, the project provides additional solid evidence of the university's commitment to its mission of problem solving and applying academic expertise to regional needs. Through the project and the technology development grants it has engendered, UWGB—despite its youth and modest size—has gained new recognition and respect as a resource for practical help to industry, as well as an institution of academic excellence.

FEECO International has reaped the benefits of having the briquetting technology and associated laboratory equipment added to its facilities. The testing equipment, in particular, has made possible some new services to other clients. Under the agreement, FEECO may demonstrate the briquetting plant to visitors. The corporation

also has the first opportunity to obtain licenses of any patents associated with the pilot plant at a price to be agreed upon at the time, and the university has agreed to split equally any profits from the sale of materials generated from operation of the plant.

Thus, FEECO has gained the potential for major economic benefits in the future, as the firm pursues the design, manufacture, and marketing of agglomeration equipment designed for large-scale operation of the waste recovery process demonstrated in the pilot plant now on the premises.

Perhaps the most significant benefit of all, however, extends far beyond the campus boundaries or the walls of the FEECO firm. The problem of industrial waste disposal has reached a crisis point in the United States. Landfill sites are at a premium in many localities. Any process must be clearly viewed as advantageous if it can not only minimize the waste volume but simultaneously recycle valuable raw materials. The program shared by the University of Wisconsin-Green Bay and FEECO International thus promises not only to help meet the insatiable need for new sources of fertilizer but also to find productive uses of large quantities of waste from paper mills and other industries—products that at present must be disposed of at considerable cost to industry as well as to the environment.

Part 5

Comprehensive Programs

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Alcorn State University (MS)

University/Industry Cluster Program

Walter Washington, President
Franklin D. R. Jackson, Director, Institutional Advancement and Planning
Academic Co-Chairman, University/Industry Cluster

Institutional Setting

Alcorn State University (ASU) is located in Lorman, Mississippi, eighty miles south of the capital city, Jackson, thirty-five miles north of Natchez, and forty-five miles south of Vicksburg. The campus rests on 1,700 acres of land, lending itself to a serene environment and unique opportunities for outdoor recreation. Scattered among the university's buildings are giant, moss-draped trees and scenic lakes. The 156-year old Oakland Memorial Chapel, one of five surviving landmarks of the original Oakland College, has been designated a National Historic Site. The multimillion-dollar, state-of-the art nursing facilities are located in Natchez.

Alcorn State University is a coeducational, land-grant, liberal arts, science and teacher education institution offering programs leading to associate, bachelor's and master's degrees.

The institution was established by the Mississippi state legislature in 1871 to provide education for the newly freed slaves. Today the institution admits and actively recruits qualified students without regard to race, color, national origin, sex, religion, age, or handicap. The primary purpose of Alcorn State University is to assist students in meeting their educational goals. While the university is committed to providing educational programs to serve the interests, needs, and aspirations of talented students, it maintains a strong commitment to, and diligently seeks to educate, those students subject to socioeconomic and cultural deprivation.

The university has had a rich and illustrious history. It is located in rural Mississippi on the site of the former Oakland College, a Presbyterian school established for the education of white males. Oakland College closed its doors at the beginning of the Civil War so that its students might answer the call to arms. Failing to reopen after the war, the college was purchased by the state "for the education of her Negro citizens." The Honorable Hirman R. Revels, the first Black to serve in the U.S. Senate, resigned his seat in 1871 to become the first president of the newly established institution. The college was named Alcorn University in 1871 in honor of James L. Alcorn, then governor of the State of Mississippi.

In 1878, the Mississippi state legislature, in accordance with the Morrill Land-Grant Act of 1862, rechartered the institution under the name of Alcorn Agricultural and Mechanical College. Thus, the institution became the first Black land-grant college in the United States. In 1974, the name of the institution was again changed to Alcorn State University. ASU considers itself the preeminent institution of higher learning in southwest Mississippi and has been designated as a regional university by Mississippi's board of trustees of state institutions of higher learning.

In 1985-86, the university had approximately 150 teaching faculty, 350 professional and support staff members, and a student body of 2,516 (2,290 undergraduates and 226 graduates). Approximately 50 percent of the teaching faculty holds earned doctorates. The faculty is both international and cosmopolitan. The institution has attracted students from all eighty-two counties in Mississippi, from thirty-two other states, and from eight foreign countries.

ASU is one of the eight state-supported universities in Mississippi under the governance of the board of trustees of state institutions of higher learning. The trustees establish the broad policies by which the university is governed; however, the university presidents have direct input in the formulation of policies. The president of ASU is appointed by the board, and has authority to administer the policies and programs of the institution. He is assisted by an executive vice president; dean of academic affairs; dean of student affairs; business manager; director of institutional advancement and planning; director of the division of agriculture, research and applied sciences (responsible for coordinating the land-grant activities of the university); and director of athletics. The academic pro-

grams are administered by seven divisions, each of which has a director who reports to the dean of academic affairs. The seven divisions are agriculture, research and applied sciences; arts and sciences; business; education and psychology; nursing; General College for Excellence; and graduate studies. Each division, except graduate studies and the General College for Excellence, is further subdivided into fifteen degree-granting departments, each department headed by a chairperson.

The main campus of the university is located in Southwest Mississippi. The major industries within a fifty-mile radius of the campus include Mississippi Power and Light, Southwest Mississippi Electric Power Association, Armstrong Rubber Company, International Paper Company, Port Gibson Electric Company, Waterways Experiment Station, Marathon LeTourneau, Crouse-Hinds Lighting Company, Mississippi River Commission, Vicksburg Chemical, and McGraw-Edison.

A large percentage of the area residents are employed by a variety of governmental agencies, including public schools and city and county governments. Many are employed locally in the forestry products industry, many others in manufacturing and service industries in the larger cities of Natchez, Vicksburg, Jackson, and Pascagoula.

ASU is the largest employer of professional employees in a forty-mile radius and is the largest single employer in a thirty-mile radius. The university, through the multiplier effect, annually generates in the community some $80 million.

ASU serves as an educational, social, cultural, recreational, and occupational center for the immediate community. It provides outreach programs for rural and small city dwellers through cooperative extension programs.

More than 50 percent of college graduates who work in the counties adjacent to the main campus received at least one degree from the university. The university also educates a significant percentage of college graduates who work throughout the state. The university plays a significant role in providing preservice education as well as inservice education for the local residents. To meet the needs of area residents, the university maintains flexibility in scheduling its curricular offerings. Many of the university's employ-

ees hold part-time employment in industry; others serve as consultants to industry as well as to government entities.

The Program

In 1973, the cooperative education program and the University/Industry Cluster Program were established. These programs further enhanced university/community interactions. The Alcorn State University/Industry Cluster facilitates collaborative effort among businesses, industries, government agencies, and cooperating universities with ASU. The program endeavors to strengthen university programs and services so that ASU graduates are competitive with graduates of other developed universities as they seek to assume professional positions in the private and public sector. Through the program, business, industry, and government agency executives are able to visit the university at least two times each year to participate in conferences and workshops and work with administrators, faculty members, and students. Together, they work in the areas of curricular review and development; student placement for cooperative education, summer employment internships, and permanent employment; public relations and promotion; educational resources and media development; cluster membership development; and fund-raising and administrative and management improvements.

In addition to the two annual conferences and workshops, ad hoc committees and task forces of the cluster meet regularly to work on projects of mutual concern to the university and the business community. Individual cluster members serve as loan professors and consultants, providing services ranging from improving interview skills of students to curriculum development in the sciences. The duration of the loan professor ranges from one day to two years. Cluster member organizations conduct field trips and plant tours for students, faculty and staff members of the university to provide them with firsthand experience of the world of work.

The approximately twenty-three university representatives (unit heads, faculty members, and students) on the cluster are appointed by the president. The industry and government representatives are appointed by those organizations. The cluster and university determine the organizations that are invited to join the cluster. Currently, there are approximately fifty businesses, industries, and

government agencies that are members of the cluster. These include many Fortune 500 corporations as well as small local businesses and federal and local government agencies.

An executive committee serves as the policy-making arm of the cluster. Ad hoc committees are issue- and task-oriented. These committees meet during the general cluster conference and at other times as necessary.

There is a student cluster program sponsored by the university/industry cluster. It meets regularly and focuses on concerns of particular interest to students. Representatives of the student cluster meet with the general cluster and with the ad hoc committees.

Campus facilities required for the program include classrooms, meeting rooms, and dining and lodging facilities. In some cases, research facilities and appropriate equipment are used. Corporation facilities are used as meeting sites for ad hoc committees and task forces, for conducting field trips and plant tours, and as sites for cooperative education, summer, and internship experiences for students.

The cluster program, as a concept, began in 1968 at the urging of the late President Lyndon B. Johnson, who asked corporate America to assist minorities in moving into mainstream America. The National Alliance of Business heeded President Johnson's call and became involved in the "College Cluster" program, a cooperation of the nation's businesses and industries with the academic community to assist students in preparing for professional careers.

ASU subscribed to the cluster concept and established its program in 1973. The initial contact for establishing the program was made by the university's director of development with the endorsement of the university president. Representatives from the National Alliance of Business, local businesses, and established universities cooperated in establishing the program at ASU by developing a plan for the program and establishing policies and guidelines.

The university's director of alumni affairs was appointed to coordinate the initial development of the program and to plan the first general meeting. The president also appointed other university representatives. At the first general meeting, an industry co-chairman was elected and task forces established. No alterations in campus administrative or governing structures or procedures were needed to accommodate the program, nor were there union or

(additional) state regulations to meet or to overcome. Selected businesses, industries, and government agencies were invited by the university president to join the cluster program.

Day-to-day management and administration of the cluster program is done by the director of institutional advancement and planning and academic co-chairman of the cluster. That administrator was appointed by and reports to the university president. The academic co-chairman works in close collaboration with the industry co-chairman, who is elected by the general cluster annually. The cluster academic co-chairman is the main link between academic and industry representatives on an on-going basis and works closely with the cluster industry co-chairman in planning the annual cluster conferences and executive committee meetings. The cluster treasurer maintains records of all financial matters relating to membership dues and other special assessments. The chairman of the membership and foundation task force is responsible for managing funds contributed by cluster members for special projects such as scholarships or equipment.

The cluster executive committee, composed of eight academic representative and eight industry representatives, formulates policies governing the operation of the cluster. The executive committee approves cluster projects and appoints ad hoc committees.

The academic co-chairman of the cluster provides campus-wide coordination. All unit heads—vice president, deans, directors, chairpersons, student government president, and Miss ASU—are members of the cluster. All cluster-related activities are open to faculty and staff members and students. These individuals participate in cluster meetings, studies conducted by the cluster, field trips and plant tours, and seminars. The business, industry, and government agency representatives provide input on program administration. Those representatives who serve on the executive committee are directly involved in forming administrative policies for the program. The university president has final authority over all aspects of the program; however, he relies on the cluster academic co-chairman and unit heads for advice on cluster matters.

Faculty and staff members participate in projects, such as curricular revision, field trips, and ad hoc committee meetings, but only those who serve on ad hoc committees and on the executive committee are involved in program administration. Because most

administrative activities are carried out by the cluster academic co-chairman, only a modest amount of faculty and staff time is required for administering. The executive committee members and academic co-chairpersons of the ad hoc committees devote a modest amount of time for the program administration. It has not been necessary to hire new staff or increase present salaries to administer the program. The program has a budget funded by "voluntary" annual membership dues of $100 to support administrative costs other than salaries, such as commodities, travel, and cost of conducting meetings. Academic representatives do not pay the "voluntary" membership dues.

The Alcorn State University/Industry Cluster Program has provided many benefits to the corporate and government agency members as well as the university community. The cluster program provides a medium through which corporate and government executives are able to join with one another and with academicians and students to analyze and solve problems and challenges of mutual concern. The corporate and governmental representatives are able to interact with and obtain the thinking of some of the brightest minds in the community. They are able to work with and observe students who are potential employees, an advantage in hiring. Because of their close relationship with the institution, they are able to have direct input into the curricula, thereby helping ensure that graduates are adequately prepared for employment with their firms. Many corporate and governmental cluster members have indicated that it is revitalizing, reinvigorating, and intellectually stimulating to return to the campus and interact with the creative and high-energy students. Additionally, faculty and staff members serve as guest speakers, consultants, and researchers for cluster member organizations.

The university community thrives under the program. The cluster assists the university in improving its curricula; conducting management seminars; placing students in internships, summer and full-time positions; introducing students, faculty and staff members to the world of work through field trips and plant tours; acquiring educational resources; conducting publicity and public relations; providing internships and summer employment for the faculty; providing loan professors; and gaining opportunities to obtain corporate and government support for other university programs.

The cluster sponsors an Annual Career Day Program at the university, with some seventy corporate and government representatives participating. It also awards some fifty annual scholarships and special awards to outstanding students. The cluster member organizations provide third-party validation of university programs and graduates. Members serve as strong advocates of the university to the state legislature and among other noncluster member corporations and government agencies. Through the cluster program, ASU has been able to expand its classrooms into corporate and government facilities and to increase its faculty and staff to include volunteers from businesses, industries, and government agencies. The benefits of the cluster to ASU simply could not be bought: "we cannot buy what the volunteer gives."

There will be no significant changes in the direction of Alcorn State University/Industry Cluster in the near future. Future university needs will yield in invitations to other corporations to join the cluster. Efforts will be made to develop a more systematic, campuswide coordination between the cluster program and other corporate/college relations efforts. The program will be reviewed to determine the necessity of having all unit heads and directors at the university as members of the cluster. The membership dues structure will be reviewed to determine whether modifications are necessary. The ad hoc committees structure will be reviewed as well.

The success of the Alcorn State University/Industry Cluster may be attributed to three main elements: (1) a university president committed to the program both cognitively and behaviorally; (2) an industry co-chairperson committed to the program and providing leadership for the corporate and government representatives; and (3) an academic co-chairperson who is concerned, committed, and capable. If those three elements are combined with interested faculty and business leaders, a program of this nature will succeed. Institutions desiring external assistance in the preliminary stages of such a program should contact the National Alliance of Business or other institutions with successful programs.

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Grand Valley State College (MI)

Facilities Management Program
Engineering Science Program

Arend D. Lubbers, President
Arthur C. Hills, Executive Assistant to the President

Institutional Setting

Grand Valley State College (GVSC) was chartered in 1960 by the State of Michigan. Twelve miles west of Grand Rapids, it serves the second-largest population center in Michigan, an area economically stable because of a diversity of business and industry. The 8,361 students enrolled in fall 1986 pursued studies in seventy-five academic areas of concentration, with 80 percent at the baccalaureate level and 20 percent in master's degree programs. There were 227 full-time faculty and a sizable number of adjunct professors.

GVSC, like many other comprehensive institutions, offers a broad spectrum of professional programs, established to serve the region, including nursing, medical technology, physical therapy, biomedical sciences, engineering, accounting, business administration, management, marketing, taxation, finance, facilities management, computer science, criminal justice, teaching, advertising and public relations, broadcasting, hospitality and tourism, social work, and public administration. The college's rapid growth from 226 students in 1963 to 8,361 in 1986 has demonstrated the compelling need for a responsive public institution in the area.

Since its inception, GVSC has believed in the importance of required liberal arts study for every student. Thus, a student must complete eight courses in mathematics/science, social science, and humanities/arts and prove competency levels in mathematics, English, and reading by completion of certain courses or by satisfactory scores on placement tests.

GVSC is structured into four academic divisions, directed by deans. In addition to the president, Grand Valley is administered by

a provost-vice president for academic affairs and a vice president for administration.

The college has been particularly sensitive to societal needs, often responding to requests from the community to establish new programs. Examples would be engineering, nursing, physical therapy, special education, facilities management, and social work. In each case, corporate, agency and/or school leaders approached GVSC with urgent requests to develop programs to prepare graduates to fill critically needed positions. In each case, GVSC formed citizen advisory boards for establishing the new programs. The boards continue to serve, offering advice and counsel.

GVSC, recognizing the importance of blending classroom study with the real world of work, places more than 1,000 students each year in internship positions in business, industry, schools, government, and various agencies. Without question, the placement of interns and the development of advisory boards in many disciplines has greatly enhanced the corporate/college partnership the college has worked so hard to foster.

The Program

The phrase "creating harmony between workers and their environments" well describes the new Grand Valley State College baccalaureate Facilities Management Program. The program prepares graduates to deal effectively with the kinds of problems they will encounter in managing a modern office. It combines basic business and management disciplines with an understanding and working knowledge of a range of skills in systems and procedures, space planning, acoustics, lighting, facility administration and maintenance, psychology, motivation, and data processing.

The major objectives of the Facilities Management Program include providing a solid foundation in business disciplines, giving students basic skills in the functional areas of business necessary for analyses and decision making. In addition, students acquire a broad liberal arts base to develop appropriate communications skills, cultural understandings, historical perspectives, analytic skills, humane concerns, and a sense of ethical values. Finally, students are given a working knowledge of office systems design and planning, office work methods, methods of office productivity analysis, and necessary specialized skills for the management of office systems.

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The Facilities Management Program prepares graduates for a career in one of the newest and most exciting fields of business administration, qualifying them for positions in a broad spectrum of facility-oriented companies, corporations, and institutions.

For the first time in the nation's history, more than half the work force is employed in white-collar positions. However, the level of business efficiency and worker productivity and satisfaction does not reflect the enormous recent advances in office equipment and technology. The Facilities Management Program addresses this problem.

Nearly 80 percent of the world's office systems industry is headquartered in West Michigan, within a few miles of Grand Valley State College. Such major corporations as Steelcase, Herman Miller, Haworth, American Seating, and Westinghouse are all located nearby. Thus, the development of the Facilities Management Program was a logical corporate/college endeavor.

When the program was first discussed in 1980, an advisory committee composed of leaders in business technology was formed to set goals and evaluate program development. That advisory board continues to serve and includes representatives from many major corporations, including Steelcase, Herman Miller, Monsanto, Aetna Life Insurance, Atlantic Richfield, Corning Glass Works, Sperry, Westinghouse Electric, Office Technology Research Group, and Computervision Corporation.

Students are regularly assigned to special-project internships. Research is conducted by faculty members, and a data base of knowledge in the field continues to grow. Students and faculty members work with a computer-aided design (CAD) system, frequently providing newly designed office systems for area corporations.

As evidence of the importance of this program to the industry, in 1985 the U.S. Business and Institutional Furniture Manufacturer's Association established a professorship to support the growth of the program. This move was deemed necessary to provide a comprehensive curriculum for use as a model for other institutions across the country. At present, GVSC is successfully engaged in a $1-million fund-raising campaign to support the addition of faculty and to purchase additional equipment and library holdings for the Facilities Management Program. With the exception of private

sources, funding for the program comes from tuition and fees and from the State of Michigan's general support for the college.

The Facilities Management Program is located in GVSC's school of business. A director within the school administers the program. The director and faculty were brought to Grand Valley because of their expertise in this field. Internship placement in this program, as in several others at GVSC, is managed by the director of cooperative education and placement.

The development of the Facilities Management Program is a prime example of close cooperation between the corporate world and higher education. Without question, it will flourish and provide graduates for a growing need in the United States and abroad.

As another example of corporate/college cooperation, Grand Valley State College has developed a four-year Engineering Science Program. This addition reflects the fact that the West Michigan area, centered in Grand Rapids, is one of the fastest-growing technical, manufacturing, and industrial regions of the state. There is a critical need for engineers to support this growth and to stimulate its continuation. Currently, the greatest demand for engineers is in the computer and electronics fields, with high demand also in the mechanical, chemical, and industrial fields.

Grand Valley State College was approached a decade ago by area industrial leaders urging the development of a complete engineering program. Prior to that time, GVSC offered a two- or three-year preprofessional engineering transfer program, emphasizing engineering fundamentals, basic science, mathematics, communication skills, and general education. Transfer after three years allowed students to receive two degrees, one from Grand Valley in physics and one from the transfer school in a specialized engineering field.

While that program continues today, a complete four-year engineering science program has been added, resulting largely from urging by area industrial leaders. In addition, a Bachelor of Science in Engineering with a cooperative education program has been established. This degree program features a semester of college study alternating with a semester of internship experience in one of the many participating area industries. The field experience begins during the summer following the first two years of the engineering curriculum. Acceptance into this program depends upon satisfac-

tory academic preparation and employability in the field. Placement of the B.S.E. candidate in a cooperative engineering work experience is made through the college placement office by the director of cooperative education.

From this brief description, it should be clear that industrial and manufacturing firms in this region have vested interest in the success of these programs. To help with start-up costs, these firms contributed nearly $0.5 million for additional equipment, library holdings, and engineering faculty. Of continuing value is the engineering advisory committee, composed of local professional engineers who provide advice and counsel.

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Oregon Institute of Technology

Portland Center
State Advisory Council and Program Advisory Committees
College Institutes and Agencies
Geo-Heat Utilization Center

Larry J. Blake, President
Blair M. T. Odo, Assistant to the President

Institutional Setting

Oregon Institute of Technology (OIT), the coeducational, baccalaureate polytechnic college of the Oregon State System of Higher Education, is the sole polytechnic college in the entire Pacific Northwest. It holds a position of national prominence in the engineering, health, and business technologies.

Among Oregon's senior colleges and universities, Oregon Institute of Technology is a newcomer. In 1946, the State Emergency Board of the Oregon state legislature, in order to facilitate the establishment of a vocational rehabilitation school for World War II veterans, authorized acquisition of a deactivated Marine Corps hos-

pital in a narrow valley on an 822-acre site three miles east of Klamath Falls. With a total enrollment of thirty-three students, Oregon Tech began on this site in July 1947 as the Oregon Vocational School. Reflecting continuing growth, its name was changed in 1948 to Oregon Technical Institute. The school became a member institution of the Oregon State System of Higher Education in 1960. Oregon Tech occupied the new campus site in August 1964 and was officially dedicated in October of that year.

During these years, Oregon Tech progressively expanded the scope and rigor of its educational programs. In 1957, it was granted authority by the Oregon State Board of Education to award associate degrees. In 1972, it received full regional accreditation as a baccalaureate degree-granting institution. To more properly reflect this new status, Oregon Tech's name was changed in October of 1973 by legislative act to Oregon Institute of Technology. In 1978, the state board of higher education authorized OIT to award the more traditional Bachelor of Science degree. The B.S. degree has been phased in to replace the Bachelor of Technology degree in nine areas to reflect the broadening and expansion of OIT's contemporary baccalaureate degree requirements.

Today OIT offers fifteen separate associate degrees in both technical disciplines and liberal arts. The college awards seventeen baccalaureate degrees: nine in engineering technologies, five in health technologies, two in business technologies, and one in laser electro-optics technology.

The first two years of a student's work at OIT are spent mainly in technological areas in order to help ensure job readiness at the associate degree level. General education courses and additional technological courses are taken in the second two years. This also allows block transfer from community colleges. A transfer program is available for those students who wish to complete their baccalaureate at a university or liberal arts college.

Students must undertake a senior project in fulfillment of the baccalaureate degree. The project requires that the student plan, develop, and complete a project for a client. The student prepares a formal proposal, writes progress reports, and given a demonstration or presentation upon its completion.

In 1985-86, OIT enrolled 2,500 students and employed 311 faculty and staff.

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Oregon Institute of Technology is one of eight colleges and universities governed by the Oregon State Board of Higher Education and managed by a central chancellor's office. The president is chief executive officer of the campus. There are three deans: one each for academic affairs, administration, and student services. OIT's curricular divisions are business technologies, engineering technologies, health technologies, and arts and sciences.

Klamath Falls, site of OIT, is in south central Oregon. The city is the center of an urban area of about 45,000 and the hub of an agricultural, lumbering, recreational and, increasingly, high tech area. World famous Crater Lake and mountain peaks exceeding 9,000 feet lie within Klamath County.

Located on land donated to the state by Klamath area citizens, OIT's modern 173-acre campus enjoys a spectacular view of Upper Klamath Lake and the Cascades. The campus is entirely heated and cooled by geothermal energy. With Merle West Medical Center and the College Industrial Park located immediately adjacent, and a system of natural hot water wells heating its buildings, OIT is uniquely suited to serve as the state's focal point for progressive technical higher education. The buildings on the award-winning campus all reflect the excitement of teaching and learning the technologies. State-of-the-art equipment in modern laboratories, supported by a learning resources center that houses traditional library materials as well as computer-assisted and audiovisual materials, ensure Oregon Tech's remaining at the leading edge. A new classroom laboratory building with the latest in modern facilities for electronics, computer science, and laser technology instruction will be completed in fall 1987. The campus is totally self-contained with no buildings more than a five minute's walk away.

OIT is entering the final year of a three-year effort to become a completely computerized campus. There are nearly 400 computer input devices on campus, four microcomputer labs, a large computer and terminal lab open twenty-four hours a day, and several other drop-in computer facilities for students. Microcomputers can be found at two-thirds of the faculty desks. Beginning next fall, virtually all students in technology curricula will be required to provide their own computers.

The Programs

Since its beginnings in 1947, Oregon Tech has relied on its strong ties with business and industry. Through these cooperative relationships, OIT's curricula, faculty, equipment, and facilities are kept current for high-technology programs in an age of rapid change.

A dramatic example of the cooperation between an academic and industrial community is the Portland Center, which Oregon Tech opened in 1983. This satellite program was designed to accommodate working men and women in the greater Portland area who had already earned associate degrees in a technical area or accounting and who wished to continue their education without leaving their current employment.

Until the center opened, Oregon's public higher education facilities and Portland's manufacturing base were mismatched. While Portland area industries employed large numbers of technicians and technologists, curricula in the nearby colleges and universities lacked the hands-on training and education for which Oregon Institute of Technology had become renowned.

With encouragement and participation of the Portland area's leading firms, many of whom pay the costs of their employees' tuition, the Portland Center is growing and will continue to provide Northwest Oregon's men and women the opportunity to acquire new skills, a bachelor's degree, and much-sought-after job promotability. Upon completion of its own site in Clackamas County, the Portland Center will be able to expand its offerings. It will be renamed the Metro Campus of Oregon Institute of Technology to better reflect its service area.

OIT also utilizes a State Advisory Council and Program Advisory Committees. The purpose of the state advisory council is to advise the OIT president on mission, goals, policies external relationships, and other pertinent matters. When appropriate, it makes recommendations for referral to the Oregon State Board of Higher Education through the OIT president.

The membership, appointed by the OIT president, consists of representatives of business and industry, education, and the public. Current members are from Oregon, Washington, Idaho, California, Nevada, Arizona, and Colorado. They represent such industries and

organizations as Boeing, Northrup, Lockheed, Hughes, Tektronix, Hewlett-Packard, Intel, IBM, NASA, U.S. Forest Service, and U.S. Bureau of Land Management.

Members serve four years beginning on January 1, and approximately one-fourth of them are appointed each year. The council holds at least one regular annual meeting, called by the president, and other meetings as deemed necessary. Council officers are a president, vice president and secretary.

The basic purpose of the program advisory committees is to help guide the specific academic programs through wise counsel. The committees have no administrative or legal authority, nor do they, in any way, take away the rights or responsibilities of the OIT staff. Advisory committees are appointed by the president of OIT and serve in advising the president and staff in a variety of ways. OIT departments that currently have advisory committees are dental hygiene, diesel power technology, laser electro-optics technology, manufacturing engineering technology, medical imaging technology, medical technology, nursing, civilengineering technology, computer systems engineering technology, electronics engineering technology, mechanical engineering technology, and business technologies.

Members of an OIT advisory committee can expect to participate in one or more of the following: curriculum content advisement; equipment, facilities, and instructional course review; regional, state, and/or community resources coordination; career guidance and placement services; program evaluation; regional, state, and/or community public relations; professional development advisement and assistance; and policy recommendations.

A program advisory committee consists of 7-15 members. Members are selected from different geographical areas and represent various levels of employment within the industry. They are appointed for a three-year term by the OIT president based on recommendations from other advisory council members, industry representatives, or faculty members. The president also appoints the committee's secretary, generally the department head of the program involved. The chairperson is elected annually by the committee. This selection is a critical step, in that much of the committee's success depends upon the chairperson. The chairperson works closely with the college liaison, presides at meetings, ap-

points subcommittees, and usually represents the advisory committee in other groups.

OIT also has a series of college institutes and agencies. The Small Business Institute is a program for upper-division students who already have an associate degree in technology and who want to earn a Bachelor of Science in industrial management, with the career objective of becoming a manager in industry. The program consists of courses in business, management, advanced technology, and general education, and of practical work experience in industry.

For the work experience, the student is required to get hands-on experience in industry relating to either a particular course he or she is taking or to the curriculum being pursued. The activity must involve industrial, computer, or marketing work of a complex nature requiring a high level of industrial business skills. The student must work closely with the client company on a project that has as its ultimate goal the improvement of the company's operation. Among the projects completed have been feasibility studies for small businesses, market analyses for petroleum products, a public bus system feasibility study, and work station design for an electronics manufacturer. The institute is coordinated by a faculty member in the division of business technologies under the general direction of the division chair.

A key to the success of any small business community is the ability to adapt to and change with the business environment. To be effective in accomplishing this goal, the small business community must have access to applicable business information, training, resources, and services. In October 1984, Oregon's Small Business Development Center Network and OIT established the Small Business Development Center at OIT to provide free assistance and training to the small business entrepreneurs of its service area. The center has provided individual counseling, short-term business training, and information from external resources. In addition, the center offers a business library and resource center, computer resource area, and a product development program.

The center is administered by a director who reports to the administrative dean. Center staff members are a counselor and secretary.

Most recently, a task force was appointed by the OIT president to conduct a feasibility study on a business incubator in Klamath Falls. The concept has the support of the city government, the economic development organization of Klamath Falls, and two private enterprises.

A Geo-Heat Utilization Center was established in 1974 with funds from the Pacific Northwest Regional Commission and is presently funded from various state and federal grants. The purpose of the geo-heat center is to encourage national and international exchange of useful ideas and applications for direct heat uses of geothermal energy. The staff consists of innovative experts in the field of geothermal direct-use and small-scale power production. Engineering and economic assistance has been provided to a broad range of clients, including the homeowner interested in geothermal space heating, municipalities engaged in geothermal district heat projects, and industrial enterprises adapting geothermal resources to meet energy needs.

The geo-heat center provides technical/economic feasibility analysis for those actively involved in geothermal development. Training sessions consist of problem solving related to site development, including reservoir evaluation, well drilling and design, pump selection, distribution system design, heating system design, and economics. The center publishes a quarterly bulletin featuring domestic and foreign research and development, and maintains a geothermal library of over 3,000 volumes for lay and technical readers.

The center is managed by a director and staffed by an associate director, a research associate, and two secretaries. Its director reports to the administrative dean.

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The State University of New York College of Technology at Utica-Rome

Small Business Institute
Management Assistance Centers
Advanced Management Program
Center for Training and Professional Development
Telecommunications Institute

Peter J. Cayan, President
Milton L. Smith, Assistant to the President for College Relations and Development

Institutional Setting

The State University of New York College of Technology at Utica/Rome (SUNY-UR) is a college for transfer students. Established in 1966 as SUNY's only upper-division college, it was created specifically to meet the needs of the state's two-year college graduates for professional and technical education leading to the bachelor's degree. It serves today as an upper-level extension of community, agricultural, technical, and junior colleges throughout New York State and the Northeast.

With the 1985-86 academic year, SUNY-UR began its move from a temporary campus to a permanent location in the nearby town of Marcy. The first academic building on the permanent campus, housing academic classrooms, library, auditorium, and offices, opened early fall 1985. Occupation of the other buildings is scheduled for the 1987-88 academic year.

SUNY-UR is one of four specialized colleges in the 64-campus SUNY system. It has grown rapidly since its first class of fifty-eight students in 1973. The college now enrolls 1,250 full-time and 900 part-time students.

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More than 6,500 students have graduated from SUNY-UR since its first commencement in 1975. The college has had an exceptional record of placement. Routinely, over 90 percent of its graduates are employed or accepted in graduate schools within a year of graduation. Its alumni secure employment across the nation in a range of exciting and rewarding careers.

SUNY-UR awards the following undergraduate degrees: Bachelor of Professional Studies, Bachelor of Science, Bachelor of Arts, and Bachelor of Technology. At the graduate level, the college offers Master of Science degrees in computer/information science, business management, and nursing administration.

Professional programs are offered in accounting, business/public management, computer/information science, computer technology, electrical engineering technology, general studies, health services management, industrial engineering technology, mechanical engineering technology, medical record administration, nursing, psychology, social science, sociology, and telecommunications.

The faculty possesses extensive professional work experience as well as exceptional academic credentials. Therefore, they value and promote a curriculum reflective of that combination. Internships and practica enable students to gain valuable experience in their fields. Applications, projects, cooperative work arrangements, and extensive laboratory and clinical experiences combine to make study at the college relevant as well as challenging.

The new campus of SUNY-UR College of Technology is located adjacent to Utica, the natural gateway to the beautiful Adirondack Mountains and Thousand Island vacationland. Utica, a small city of 70,000 people, is located midway on the New York Thruway. Within the city limits of Utica are approximately 900 acres of park land with abundant facilities for skiing, ice skating, golf, tennis, swimming, hiking, and picnicking. Fishing and boating are within easy reach of the city, and many lakes and streams of the Adirondack Mountains are less than an hour away.

During settlement days, Utica businessmen prospered by supplying pioneer residents with the basic necessities of life. As trade expanded with the completion of the Erie and Chenango canals, the city grew with unprecedented speed. Textile mills and manufacturing became the economic mainstay and transformed Greater

Utica into the largest textile center outside New England, a distinction it held for more than a century.

Today, a broad economic base in Utica and Oneida County reflects a wide selection of manufacturing and business service industries; agriculture, a long-time area mainstay; a renewed growth in retail facilities; tourism; and other endeavors. Utica's contemporary industrial profile reflects a variety of successful corporations, including General Electric, the area's largest industrial employer with approximately 3,000 personnel, Bendix, Special Metals, Chicago Pneumatic Tool, and Kelsey-Hayes. Many highly respected companies offer complete services in the rapidly changing and expanding field of office systems and communications. Industrial maintenance, industrial linen supply, and industrial food service corporations are prominent among local businesses.

SUNY-UR's educational facilities play an integral part in industrial development plans for the area. In addition to adding directly to its financial base, they provide valuable assistance to industry through research, training, and technical knowledge. They make SUNY-UR an excellent business partner, particularly in high-technology, industrial development.

SUNY College of Technology's formative years were greatly influenced by political conflicts, a troubled economy, and the most dynamic period in the history of higher education. Business and industry leaders from the Utica/Rome area have been active in the development of the college from its earliest days, driven by the conviction that public baccalaureate programs are essential to the economic vitality of the upper Mohawk Valley.

The Programs

As a result, a spirit of cooperation has always existed between the college and local industry. SUNY-UR is an active member of the Industry, Labor, and Education Council of the Mohawk Valley, formed to bridge the gap between the training and educational institutions in Oneida, Herkimer, and Madison counties and the employment needs of businesses and industries in the area. From the beginning, the board of directors was structured to provide equal representation of industry/business, labor, and education. Council goals have been refined as issues have been identified, but the mission continues to be the development, expansion, and renewal of

industries and businesses through satisfying the employment and career needs of individuals.

Members of the college of technology were prime movers in the establishment of the Mohawk Valley Applied Technology Commission (MVATC). This organization, in close cooperation with the Industry, Labor, and Education Council, serves as a coordinating body and legal entity for joint action among the area's colleges and businesses. It is empowered to contract with sponsors to conduct research and provide services by participating institutions, agencies, and businesses.

The commission contracted with the National Center for Higher Education Management Systems to assess the educational needs of local technology firms. The study recommended the establishment of a Technical Information Center at SUNY-UR. The center provides in-depth data-base searches for companies involved in research on a cost-recovery basis. High-technology companies and manufacturing firms seeking new technologies for productivity improvement can obtain state-of-the-art information in their fields.

To coordinate and facilitate its services to area businesses, the SUNY-UR established its new Management Assistance Center to consolidate the activities of the college's Small Business Institute, Small Business Development Center, Development Center for Business, Industry Innovation Extension Service, Entrepreneurial Education Resource Center, and Advanced Management Program.

The Small Business Institute has a contractual arrangement with the U.S. Small Business Administration. For approximately ten years, it has serviced over 100 SBA-designated small businesses with consulting services and reports and has provided services to several units of government, nonprofit agencies, and businesses not referred by the SBA. The SBI, through select undergraduate and graduate students with close faculty supervision, provides analysis and research on a variety of topics and problems. The college is reimbursed a small fee per case for out-of-pocket expenses.

Since April 1986, the Management Assistance Center has included an officially designated and funded Small Business Development Center, which provides assistance to small firms in the central New York area. The SBDC in May 1986 cosponsored, with *The Engineering News-Record,* a national workshop entitled "Construction

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Technology for the 90's" and will continue to offer a variety of seminars to enhance the capabilities of area small firms.

An allied component, the Development Center for Business, emphasizes management and technology assistance, especially in the area of exporting. The objectives are to encourage technology innovation and improvement to foster more competitive international positions for local firms. Technical assistance in the form of improvement of manufacturing capabilities is available, while administrative assistance on exporting is generally referred to the Mohawk Valley World Trade Council, of which the college is a member.

The college's Advanced Management Program has awarded approximately seventy-five certificates to middle and top management personnel over the past eight years. During a two-year weekly program, technical and administrative managers attend ten-week seminars (three each year) to improve decisionmaking in their professions.

The Management Assistance Center has been awarded a grant from the New York State Science and Technology Foundation to fund an Industrial Innovation Extension Service to provide industrial engineering consultation to manufacturers in a six-county area of the Mohawk Valley. It will also administer a variety of special projects and seminars, such as a state education department grant for public school teacher training in international finance.

The Management Assistance Center also operates the Entrepreneurial Education Resource Center to identify and develop curriculum materials in entrepreneurial studies for distribution to secondary schools. Funded by a grant from the New York State Education Department, this pilot program provided workshops and onsite consultation for teachers of social studies, economics, and business subjects in the public schools.

Other academic services are offered to area employers, employees, and professional associates through the Center for Training and Professional Development (TPD). Many programs are tailored to the technical and management concerns of companies/organizations and are offered off campus. Other programs address current issues and are offered on campus as seminars, workshops, and conferences. Students include managers, engineers, technicians, teachers, nursing home administrators, and others. Instruc-

tors are drawn from college faculty and staff as well as trainers and consultants from throughout the country.

Between July 1, 1985, and June 30, 1986, the Center for Training and Professional Development designed and delivered fifty-two educational programs to 1,300 professionals. In addition, five seminars were conducted. Gross revenue for the year totaled $187,000.

Other efforts designed to make college resources and expertise available to business and industry included training by SUNY-UR library professionals in the use of on-line data bases. Formal presentation included the basics and characteristics of on-line data bases, the range and scope of information available, on-line searching, and the use of software to enhance the search process.

Seminars conducted for the New York State Economic Development Council have brought the college into a partnership with fifty-nine economic developers from nine states including New York, Mississippi, New England, Colorado, Oklahoma, and Michigan. In 1986 the college developed and conducted a week-long basic course that included nineteen separate seminars, each addressing a different economic development issue. A two-day advanced seminar consisting of ten different sessions was conducted the same week for thirty-one economic developers from New York State who had previously completed the basic course.

In April 1985, SUNY and NYNEX Business Information Systems Company announced establishment of the Telecommunications Institute at the College of Technology at Utica/Rome and predicted it would strategically move New York State toward leadership in the rapidly expanding electronic information industry.

The first step of the project called for NYNEX to design and install on the main campus an advanced private branch exchange, the Intecom Integrated Business Exchange (IBX), to serve as an integral part of the institute's learning environment. The exchange integrates voice and data communications, office automation systems, security, and energy management systems, and affords access to closed-circuit TV.

The institute focuses much effort on training and information. Credit and noncredit courses are given. Sessions address various aspects of telecommunications technology including equipment, voice/data networks, and management of these systems. Typically, the programs incorporate teleconferencing and other distance

learning techniques as will as vendor-sponsored equipment demonstrations. Services available through the Telecommunications Institute at SUNY-UR include training/information programs, conference facilities, and library and resource materials. The institute's Telecommunications Laboratory for applied research and experimentation is unique to the region and may be incorporated into beta testing activities. The institute also provides consultation services, technical and scientific support, and follow-up training/ consultation. It is actively involved in developing internship and coop programs with area businesses for telecommunications majors. Advocating for telecommunication standardization through IEEE and CCITT is also a part of institute activities. The Telecommunications Institute is also developing a regional library and reference center for telecommunications information.

The vice president for administration and the vice president for academic affairs at SUNY-UR conceived of the Telecommunications Institute when they jointly considered what sort of a telecommunications system ought to be installed on the college's new campus. During investigations in 1982 and 1983 the two administrators discovered there was no single resource to which they could turn for answers to all their questions about selection, installation, and operation of telecommunications systems.

They correctly reasoned that the college of technology had most of the basic components to develop such a resource. Available were a new and growing physical plant, telecommunications-related academic curricula, experienced faculty, and the infrastructure to put the ingredients together. Lacking at that time were two essentials: an academic major in telecommunications and an industrial partner to provide support and to ensure continuing relevance of institute training and informational activities. The former was to be developed by SUNY-UR; the latter component, they felt, was equally critical to the success of such a venture.

Working with the director of telecommunications for SUNY central administration and the staff, college administrators developed the specifications for a request for proposals, which was sent to major telecommunications firms throughout the country. For a period of about a year, the vice presidents met with representatives of interested firms. Through these candid and informative meetings and careful examination of written documents, NYNEX was selected.

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From the college's point of view, three considerations are of great importance among many criteria used to select the corporate partner. First was the relevance of the firm's expertise to the needs of the college and to the goals of the fledgling institute. Second was the level of direct support the firm was willing to make to the institute through hardware, software, personnel, and promotion. Third was the visibility and prestige of the firm as a recognized leader in the telecommunications industry.

Daily administration of the Telecommunications Institute is by an executive director, an executive loaned from NYNEX. The executive director sells services of the institute, works with the college in procuring equipment, helps market the program, teaches a course, and assists in screening and hiring the faculty. The executive director's assignment to the Telecommunications Institute is for a period of about eighteen months, after which he or she returns to the parent company and is replaced by another loaned executive.

SUNY-UR's oversight of institute operations is provided by the chief academic officer. This individual is responsible for all instructional activities conducted by the college, including all institute programming, and serves on the professional advisory committee of the institute.

Clerical and faculty support of the institute, as well as all conference and workshop logistics, are provided by the college. The college's office of professional development handles all noncredit programming and provides logistical support for conferences and workshops. The office is staffed by three professionals and two clerical staff members.

Guiding the institute and its mission is a board of directors. This group of industry experts, from major telecommunications companies such as AT&T, MCI, NEC, and NYNEX provides the knowledge and strategies needed to maintain a program based on progress and geared to the future.

The telecommunications field currently has an acute shortage of trained personnel. National and international firms seeking individuals with expertise in telecommunications forecast the need for 100,000 new employees within the next five years. The program in telecommunications leading to a Bachelor of Science at SUNY-UR builds on three professional areas of study: electrical engineering

technology, computer/information science, and management. Its interdisciplinary nature is designed to teach technically oriented students the social, managerial, and political aspects of telecommunications while teaching others the technical portion of the program. Students in this program will have the advantage of learning in a "living laboratory." The Telecommunications Institute provides students with hands-on experience in state-of-the-art technology. This access to the institute, along with extensive course offerings in related areas, affords students unmatched educational and employment opportunities.

The SUNY-NYNEX cooperative venture exemplifies how a corporation can contribute expertise and technical knowledge to better serve students, the public, and the state's economy. NYNEX engineers and telecommunications specialists assist in the development of course design, provide faculty for some courses, and lend expertise in testing new products and services. The NYNEX executive-on-loan serves as a member of the institute faculty and administration.

The benefits to SUNY-UR deriving from its partnership with NYNEX are manifold. Three important benefits are the enhancement of the college's academic major in telecommunications, the availability to the campus of continually updated hardware and software for its own telecommunications network, and promotion of the institute and the college by NYNEX.

The college and NYNEX benefit mutually from their partnership because of their status in their individual spheres of influence. The college provides access to academe for the company, and the company serves as a window on the corporate world for the institute.

The result is that the college and the institute have benefited directly from contributions of equipment from TIE/Industries, Inc., from Data General Corporation, from Gould, Inc., from Redcom Laboratories, Inc., and from IBM, Inc. In addition, the college was prominently included in a national advertising campaign by NYNEX/BISC in ads placed in *Computerworld, MIS Week,* and the *Wall Street Journal* as well as central New York dailies.

Expectations are that the SUNY Telecommunications Institute will continue to grow in stature, gaining national recognition rapidly. Additional corporate sponsors will be admitted to membership

in the institute. Expectations are that this cooperative venture between the college and corporate community will remain a landmark and a model well into the foreseeable future.

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The University of Akron (OH)

Center for Taxation Studies
Biomedical Engineering Cardiovascular Laboratory
Rotational Molding Development Center
Edison Polymer Innovation Corporation

William V. Muse, President
Susan Calvo, Director of Public Relations
Cyndee Witner, Associate Director of Public Relations

Institutional Setting

The University of Akron (UA) was established in 1879 as Buchtel College, a church-related, liberal arts college. In 1913 the college's assets were turned over to the City of Akron to form the nucleus of the Municipal University of Akron. The university's academic and physical growth accelerated when it achieved full state university status in July 1967. Today this comprehensive, coeducational urban university serves students from eighty-two counties in Ohio, thirty-seven other states and eighty-eight foreign countries.

In fall 1986-87 the university began its 117th year with more than 27,000 day and evening students enrolled in undergraduate and graduate programs leading to the associate, bachelor's, master's, and doctoral degrees. Noncredit enrollment increases the total to over 30,000 on the Akron campus—making it the third largest university in the state.

The university's teaching staff is composed of approximately 2,454 full-time and part-time credit and noncredit faculty and graduate teaching assistants. In addition, there are 332 administrative faculty members and professional librarians. The nonacademic staff, full and part-time, numbers 1,020.

As a state university, The University of Akron's board of trustees is appointed by the Governor of Ohio. The board appoints a president, who, with a presidential staff, administers all policies established by the board. There are four vice presidents: for business and finance, for administrative services, for institutional advancement, and a senior vice president and provost who is responsible for all academic matters. The university has eight degree-granting colleges: arts and sciences, engineering, education, business administration, law, community and technical, fine and applied arts, and nursing.

The University of Akron is located in the heart of Akron, a large metropolitan area of over one-half million people. Within a radius of 100 miles, there is a population far exceeding two million. Known as the Rubber Capital of the World, Akron is the world headquarters for Goodyear, Goodrich, and GenCorp. Akron is also headquarters for Roadway, the largest trucking company in America. It also is home to numerous manufacturing companies of various sizes and has become a high-tech center. The university's world-famous Institute of Polymer Science and Center for Polymer Engineering are helping to create Akron's nickname, "polymer valley." The community has experienced a major change from tire production to headquarters and research.

The University of Akron has, since its conception, been an integral part of the city. On the board of trustees and various advisory committees, one will find leaders from Akron's business community. In addition to community involvement, the city and county government have worked closely with the university.

It is difficult to go into any business or school in the area and not find that the majority of the professional employees are graduates of the University of Akron. Over the last few years, nearly 88 percent of the graduates have found employment within Ohio. Of that, 60-70 percent of these employment opportunities have been available to UA graduates in Northeast Ohio. The university seems to be one of the most important factors in the local economy.

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The Programs

The Center for Taxation Studies, a joint effort of UA's college of business administration and school of law, consolidates and expands various taxation studies programs originally implemented separately in the two units. Established in 1986, the center conducts conferences and continuing education seminars to tax professionals, hosts tax return preparation, audit and litigation clinics, and publishes *The Akron Tax Journal.* In addition, faculty members from the center will study policy issues and legislation that affect tax laws. Faculty members may work directly with legislators to provide information about tax issues. Debates and other public forum activities will be planned to educate the public on tax laws. Hundreds of students, alumni, tax professionals, and lay persons benefit from these programs. Various persons from the business and professional communities in the region are brought to the campus to participate in tax activities.

Graduate courses in taxation are taught by faculty members from the business college and the law school. Business majors earn a master's degree in taxation while law students earn an LL.M. in taxation. Research projects are also conducted by faculty members from both disciplines.

The support structure for the center was provided by a five-year state grant. Thus, no private funding was sought from the business and professional sectors. Procedures for governance and policy of the center were developed in the academic sector, with the business and professional communities serving in an advisory role.

The university contributes additional funding to support a director for the center. The director oversees existing programs; works with interested business, professional, and academic personnel to increase the level of academic-nonacademic cooperation needed to improve and expand existing programs; and implements new programs. An advisory committee of deans and tax studies faculty members from each college assists the director in formulating policies and programs and in providing periodic fiscal review of the center.

A self-supporting facility, the center relies on income generated by tax publication subscriptions and fees paid by those who attend seminars, conferences, and continuing education courses.

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Development of the center enables the law school to expand its Volunteer Income Tax Assistance Program. Individual taxpayers who do not seek regular advice from a tax professional, but have questions about the complex new tax laws, can get answers from taxation students. Both clients and students benefit from this service.

Perhaps most important, the center is a resource for such disparate disciplines as business, finance, economics, political science, psychology, sociology, and urban studies.

The Biomedical Engineering Cardiovascular Laboratory was established in cooperation with Goodyear Tire and Rubber Company, The University of Akron, the Cleveland Clinic, and area medical institutions to provide improved materials and designs for left-ventricle-assist devices and artificial hearts.

The program was developed to broaden the base of support and interaction among the academic, medical, and corporate entities. The university was the logical location for the laboratory because of the strength of the engineering and polymer programs. The negotiations were primarily between Goodyear, the Cleveland Clinic Foundation, and the college of engineering.

During the establishment of the laboratory, Goodyear contributed equipment, manpower, and funding and provided basic processes. The company's support was crucial in uniting the diverse elements of the community to cooperate in the development of the laboratory. The Cleveland Clinic Foundation utilizes the materials and devices developed at the laboratory in its cardiovascular research program.

The unit was included in an existing administrative structure under the auspices of the dean of the college of engineering. The laboratory is integrated into the Institute for Biomedical Engineering Research and is staffed by a director, two employees from Goodyear, a technician, and biomedical engineering graduate students.

The Association of Rotational Molders and The University of Akron also have established a Rotational Molding Development Center. Unveiled during Spring 1987 semester, its purpose is to perform research in rotational molding, develop industrial educational programs, and provide technical assistance to the industry. The laboratory space and staff are supplied by the university; equipment

and operating funds come from industry. The facility will benefit research programs at the university and will provide advanced technology to the roto-molding industry.

The center was established at the University of Akron because of the faculty's research and educational reputation in polymer science and engineering. The initial contacts and subsequent efforts to develop the center were between the association and the college of engineering.

The Edison Polymer Innovation Corporation was established to foster research and development of new commercially important polymeric materials and processes. The corporation was established by UA, Case Western Reserve University, and Ohio industrial entities in response to the State of Ohio's Thomas Alva Edison Program. The corporation sponsors polymer research at the two campuses. Each campus provides space for research projects obtained by individual faculty members from the corporation.

The corporation was developed by the directors of the polymer-related units at the two schools and selected polymer industry research directors. Industrial organizations may join the corporation for a fee. The board of directors includes industrial representatives, academic representatives, and governmental representatives. The major task was to obtain agreement among all parties for the program structure and direction. A separate corporation with trustees from all interested parties was required.

The corporation has a board of trustees, a president and executive chief operating officer, a vice president, secretary, and other employees as needed to manage the programs. The corporation provides the support for staff and equipment used in polymer research in the laboratories of the two universities. The trustees determine the basic policies and directions for the research program.

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The University of Tennessee at Chattanooga

The Center for Community Career Education
LINK
Career Beginnings Program
Cooperative Education Program
The Cranston B. Pearce Center for Applied Engineering and Technology

Frederick Obear, Chancellor
Jerry W. Weeks, Dean of Continuing Education and Public Service
Robert Marsh, Director of Adult and Special Credit Programs

Institutional Setting

The University of Tennessee at Chattanooga (UTC) is an urban university located only a few blocks from downtown Chattanooga, a city noted for its industry, history, and natural beauty. Home to over 600 industries, Chattanooga lies at the foot of Lookout and Signal mountains, where the Tennessee River forms Moccasin Bend. Chattanooga acts as a "mini-hub" for rail, highway, and air traffic in the Southeast. With Chickamauga Battlefield Park nearby, Chattanooga is steeped in Civil War history. The city also has a rich cultural environment enhanced by contributions from the university and many civic organizations that support theaters, a symphony orchestra, several museums, and an arts council.

Chattanooga, "Gateway to the South," is a multifaceted city with a population of 170,000. The city is located in Southeast Tennessee bordering Northwest Georgia and Northeast Alabama and has a metropolitan area of over 426,000 people. Traditionally perceived as an industrial center with its steel foundries, textile and apparel mills, and machinery manufacturers, Chattanooga's economy is beginning to change through a growth in service-oriented

industries. Currently, several nationally known companies make their corporate headquarters in Chattanooga. Provident Life and Accident Insurance Company with its 4,000-plus employees is located within blocks of the UTC campus. Blue Cross/Blue Shield of Tennessee, Olan Mills, Brock Candy Company, Red Food Stores, McKee Baking Company, and North American Royalties are only a few of the 420 locally owned and operated companies. Komatsu (the Japanese-American manufacturer) has recently built a plant in Chattanooga, and the addition of the General Motors Saturn plant in middle Tennessee will increase the number of manufacturing and manufacturing support jobs in the area.

UTC celebrated its centennial year in 1986. Founded in 1886 as The University of Chattanooga, under the auspices of the Methodist Episcopal Church, UTC has developed an institutional excellence derived from an unusual blend of private and public educational traditions. It merged with a local junior college, Chattanooga City College, to form The University of Tennessee at Chattanooga, which became part of The University of Tennessee system in 1969. The new campus was given the mandate to devote the major portion of its resources to the development of excellence in undergraduate education. UTC sees its goals as threefold: to provide excellent educational opportunities for its students—both undergraduate and graduate; to encourage its faculty to be active in research and professional development; and to provide vital public services for Chattanooga, the surrounding area, and the southeastern region.

The university offers undergraduate programs leading to the Bachelor of Arts, Bachelor of Fine Arts, Bachelor of Science, Bachelor of Science in Nursing, and Bachelor of Social Work degrees. UTC's graduate division offers selected areas of graduate study leading to the following degrees: Master of Arts, Master of Business Administration, Master of Education, Master of Music, Master of Science, and Master of Science in Criminal Justice. During the 1985-86 school year, 5,681 full-time students and 1,692 part-time students attended UTC. Of these 7,600, approximately 20 percent are graduate students. The faculty currently consists of 275 members, over 73 percent of whom hold the terminal degree in their disciplines.

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The university consists of two colleges—health and human services and arts and sciences—and three schools—business administration, education, and engineering. The university is administered at the state level by a University of Tennessee systemwide president and locally by a chancellor, vice-chancellor for administration and finance, vice-chancellor for development, vice-chancellor for student affairs, provost, and academic deans. The graduate school, the division of continuing education, the computer center, and various public service programs are administered by appropriate deans and directors.

Throughout its history, UTC has been an integral part of the Chattanooga community. It is unquestionably both a resource for the greater Chattanooga area and a beneficiary of the area's numerous and impressive resources. The community has helped UTC to establish a private endowment of over $25 million, the income from which enriches various on-campus programs that directly aid the development of Chattanooga and the surrounding area.

The Programs

The division of continuing education at UTC has been instrumental in developing many of the linkages with Chattanooga's business and industrial community by offering both credit and noncredit courses for individuals who wish to finish their degrees or extend their learning experience to be better prepared for their work environment. The professional development programs sponsored by continuing education enhance the economic value of the educated worker and thus strengthen the local businesses and economy.

Five programs exemplary of UTC's college/corporate integration are: (1) The Center for Community Career Education, (2) LINK, (3) Career Beginnings Program, (4) The Cooperative Education Program; and (5) The Cranston B. Pearce Center for Applied Engineering and Technology.

The Center for Community Career Education is a multifaceted career counseling and employability training center. Its programs are designed to assist individuals who look toward education as a means of adjusting to the diverse transitions periodically occurring in their lives. Begun in 1980 as a counseling program for displaced

homemakers in the Chattanooga/Hamilton County area, the center has become one of the most important community counseling services in the Southeast Tennessee/Northwest Georgia region. Like almost every other heavily industrial area, Chattanooga's employment opportunities have changed from skilled and factory jobs to service industries. The center has helped displaced workers, as well as displaced homemakers and untrained single parents, to rechannel their thoughts and talents vis-a-vis the current job market. Over 1,400 individuals have received services in the past six years in personal and career counseling, life planning, job search and retention skills, and general assessment of interest and skills. Many center participants have not only entered the area work force better prepared to meet its challenges but have also returned to the university to enroll in college classes to achieve the career choices made during their counseling at the center. The job placement efforts of the center staff have created strong linkages with the area's private sector.

Administered within the division of continuing education, the center has received over twenty-two grants totaling more than $1.3 million. Funding sources have included the Department of Labor (the Comprehensive Employment and Training Act and the Job Training Partnership Act), the Department of Education, The John D. and Catherine T. MacArthur Foundation, and Mainstream, Inc. In the past two years, the center has received additional grants to expand services to handicapped individuals and high school students.

The center staff has grown from four in 1980 to eleven today, with several part-time and graduate assistantship positions.

Project LINK enhanced the services of the Center by providing a computer application that matches disabled persons with competitive employment. This unique job development and placement model is one of five nationwide. LINK's special job-matching process eliminates lengthy searches and reduces the likelihood that any special skill or work experience will be overlooked when job applicants are evaluated for job opportunities.

UTC was selected as a site for Project LINK through a competitive proposal process grant from Mainstream, Inc., a national, private nonprofit organization established in 1975 to bring disabled persons into the mainstream of society.

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UTC

To help high school students develop more realistic career goals and understand the particular demands of the work environment, as well as to allow local business and industry to better prepare the future work force, the center sought and received a grant from Brandeis University to offer "Career Beginnings." Career Beginnings is a national program (UTC is one of twenty-four colleges selected) offering career counseling, educational support, and job opportunities for tenacious high school students who are in a disadvantaged environment. At the core of Career Beginnings is a mentor component. Each student is matched with a business-sector professional who assists the student with setting goals, college selection and enrollment, accessing financial aid, and related tasks. It is this component of Career Beginnings which creates the strong corporate/college tie.

The center's director was instrumental in writing and negotiating the original grant as well as working with area businesses to secure 100 career-related summer positions for high school juniors. A committee of ten university members and industrial personnel as well as representatives from the Private Industrial Council established a curriculum that would aid the students in their career education. A full-time director was hired to manage the program.

Funding for Career Beginnings was provided by the John D. and Catherine T. MacArthur Foundation, with a local match from the Southeast Tennessee Private Industry Council.

The Center for Community Career Education and its specific programs, LINK and Career Beginnings, has established sound linkages with the business sector. Many individuals who might not otherwise visit the campus have done so as a result of their working relationship with the center. Further, the university's mission of community outreach and public service is well served through the center's activities. Staff members are well represented on committees of various civic, industrial, and community organizations. The center has an active advisory board composed largely of businesspeople and community leaders.

Regional and national visibility for the university is another benefit of program services. Funding from national foundations and liaisons with other universities and national organizations contribute to this recognition.

The center also directly influences the economic and employment climate in the area by facilitating educational options as well as enhancing employment opportunities for the individuals it serves.

The cooperative education program contributes to the economic partnership between the university and area businesses and industries. Not only does the coop program provide UTC students a chance to put classroom theory to practical use in their chosen careers, but it also provides employers with a ready source of highly qualified and highly motivated employees. One of the beneficial bridges the UTC coop program has developed to industry and business is the Cooperative Education Advisory Board. This board, composed of eight local and regional businesses and governmental executives, meets with the director of cooperative education and staff to discuss current manpower, educational, and training needs. In addition to the establishment of more and better coop experiences, the work of the board has generated several credit and noncredit conferences and training workshops.

UTC's coop program has its origin in the school of engineering. Begun in 1970 to give engineering students hands-on work experience in their majors, the program has grown in the 1980s to include all university disciplines. Much of the growth is the result of a five-year Title VIII Administrative Grant from the U.S. Department of Education.

The coop advisory board grew out of an initial feasibility study in the tri-state business community. Personnel officers from ten of the major businesses and industries were invited to the campus to learn more about cooperative education and to discuss their manpower needs. Each of those members who expressed an interest in cooperating became a part of a nucleus to recruit at least two other business/industry personnel directors to come to a day-long coop employer workshop and luncheon held on the UTC campus. This workshop drew over fifty interested businesses and industries. Recognizing the help and support of the initial ten business representatives, the director formalized the board to include executives from a cross section of regional industry and businesses.

The cooperative education advisory board is administered by the director of cooperative education. The board meetings each semester are held on the UTC campus in the chancellor's dining

room and consist of a luncheon, a summary report of the UTC coop program's accomplishments for that semester, and a discussion of how UTC and the coop program can further aid the business community. While on campus, the board members get a campus tour and have a chance to talk with deans, departments heads, and faculty members in their respective disciplines.

The primary benefit of the cooperative education advisory board is the network of communication and cooperation established to aid the tri-state region. UTC initially received, and continues to receive, strong support in identifying new businesses interested in using coop students. Six of the eight organizations represented on the advisory board are currently utilizing UTC students; more than eighty regional organizations have hired nearly 200 UTC coop students.

The advisory board provides industry and business representatives an entree to the university that many of them might never have pursued and access to the variety of expertise of the UTC faculty and staff. More importantly, board members have been able to talk about the variety of personnel, educational, and training needs and to work with UTC representatives to tailor programs to meet those needs. As previously mentioned, several management and supervisory workshops have been held throughout the region. At the same time, the university is able to keep abreast of the immediate demands and needs of the world of work and to better prepare its students to compete in the business/industry environment.

Recognizing the great wealth of engineering experience and knowledge available from the faculty at UTC, the school of engineering established the Cranston B. Pearce Center for Engineering and Technology in 1981. The center aids the economic development of the region through the infusion of technology into the market place. Working in the various engineering disciplines, the faculty and students of the school of engineering have performed a wide range of engineering services in the region. They have conducted numerous training seminars in supervisory techniques, quality control, and engineering management. The faculty regularly conducts review seminars for professional engineering examinations. It has worked closely with the Tennessee Valley Authority and other energy companies in the region in energy management and conservation. Because Chattanooga is in the heart of the Southeast textile

industry, the center has performed economic analysis and product design for energy recovery systems that have saved industry thousands of dollars. The center has worked with Combustion Engineering, Inc., Dupont, Inc., W. R. Grace, Modern Maid, Mueller Corp., Novacom, TVA, and others.

The Pearce Center was formed as UTC's first Center of Excellence. The centers of excellence have been established at Tennessee public colleges and universities under the governor's "Better Schools Plan." The center, funded jointly by the State of Tennessee, the Tonya Memorial Foundation, and other local support, allows the university to play an even greater role in the tri-state region's educational, economic and industrial advancement. The center is named in honor of Mr. Cranston B. Pearce, former President of the Tonya Foundation and retired Executive Vice-President of American National Bank.

The dean of the school of engineering manages the Pearce Center. To identify the various needs of area industries, the dean is assisted by the engineering advisory council, a group of influential and knowledgeable local and regional industry and business representatives. Local and regional industries are regularly sent updated information on the center's activities. They are encouraged to delineate research, planning and analysis, or educational and training needs. These proposals are reviewed for feasibility by the dean of engineering, the director of engineering research and graduate studies, and the faculty of the school of engineering. Those proposals in which the UTC faculty can best aid an industry are developed further and a plan of action is negotiated and initiated.

The benefits gained from the center are numerous for all parties involved. Local industries are able to remain current on new technology and operational theory. They are able to tap a wide range of university expertise both in industrial experience and academic achievement. The university, in turn, helps its faculty avoid the ivory tower label by providing both faculty and students with firsthand industrial experience. Like the coop students, the faculty advisory teams are able to take theory out of the classroom and put it to practical use. The money received from university/industry liaisons is used for new scholarships, new equipment, and the improvement of university services.

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The University of West Florida

Office of Conferences and Workshops
Center for Economic and Marketing Education
Institute for Statistical and Mathematical Modeling
Center for Cooperative Education and Placement Services

James A. Robinson, President
Gary Warner, Director, Office of Information Services

Institutional Setting

In 1963, the Florida legislature authorized funds to establish the University of West Florida (UWF) in the Pensacola area as one of nine universities in the state university system. The first students began classes in fall 1967.

The University of West Florida enrolls students in three colleges: arts and sciences, business, and education. The university has awarded more than 29,000 bachelor's and master's degrees. UWF's cooperative doctoral program is in its tenth year. The university offers a wide range of lifelong learning opportunities for professionals who need to update career skills and for individuals who desire to participate in leisure studies and recreational activities. Annual enrollment exceeds 6,000 students at the main campus, ten miles north of downtown Pensacola, and at the centers at the Eglin Air Force Base and Fort Walton Beach.

The university has four major operating divisions: academic affairs, administrative affairs, student affairs, and university relations.

UWF maintains the John C. Pace Library as a major regional research facility and operates several public-service and research centers and institutes. In addition, the university owns 175 acres of beach property on nearby Santa Rosa Island. Adjacent to the Gulf Islands National Seashore, the property is available for research and recreation.

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The main campus is situated on rolling hills and natural woodland fronting the Escambia River. The facilities, valued at over $30 million, are designed to complement the natural beauty of the site, a nature preserve.

There are two incorporated municipalities in Escambia County, the larger of which is Pensacola, the county seat. Military installations, industry, shipping, tourism and recreation, agriculture, health care services, and retail trade all contribute to the county's economic health. This diversity has made the economy stable.

Manufacturing is dominated by the production of nylon, acrylic fibers, paper, and chemicals. In fiscal 1980-81, the ten largest businesses and industries in the county contributed 23 percent of the property tax. Military activities are a large factor in the local economy. Navy and Air Force expenditures, including construction, account for nearly one-half the payroll in the Pensacola standard metropolitan statistical area, which includes Escambia and Santa Rosa counties. More than 24,000 military and civilian personnel earn over $297 million annually at the naval air station.

The Programs

The University of West Florida has several initiatives intended to serve the public and to enhance college and corporate relations. One is the Office of Conferences and Workshops, which develops, coordinates, and administers special conferences, workshops, short courses, and seminars to meet the specific educational needs of professionals interested keep up to date in their knowledge. These programs vary from several hours to several weeks in length and are designed to serve local, state, and national audiences. Awarding of continuing education units (CEUs) to participants in these programs helps professionals continue their certification. In addition, CEUs can be used for promotion and entry into paraprofessional status.

This office is also responsible for the development of multiprofessional programs designed to help facilitate interprofessional cooperation in solving problems. Other programs enhance citizen awareness of problems and solutions of a political, social, or cultural nature.

Other activities include working with groups and individuals from outside the university who are interested in using campus

facilities for specific events, and coordinating clinics, camps, and seminars conducted on the UWF campus.

Another venture is the Center for Economic and Marketing Education, which sponsors projects in economic education for students, teachers, and other interested citizens in West Florida. The center is affiliated with both the Florida Council on Economic Education and the Joint Council on Economic Education. Activities include operating the Stock Market Game for several hundred West Florida high school students, conducting an annual workshop for elementary teachers, sponsoring an awards program for teachers who develop imaginative methods for teaching economics, and publishing a newsletter for West Florida teachers.

In addition to its activities in economic education, the center conducts research and produces reports on state and local economic problems. The center has produced reports for several state agencies on topics ranging from a cost-benefit analysis of a transportation project to a study of energy costs and the Florida economy. A major goal of center research is to provide reliable information on West Florida economic conditions to decision makers in local business and government institutions. The center also sponsors public forums to enhance the understanding of the private enterprise system.

The Institute for Statistical and Mathematical Modeling assists with statistical aspects of student theses and faculty and staff research. Researchers may consult with statisticians in the critical design stage and throughout the duration of their investigation. The service also provides statistical programming and computational consulting for the entire university community and assists local and state government agencies with statistical problems.

A broad range of career planning and employment services for students and alumni is available through two related programs of the Center for Cooperative Education and Placement Services.

The center is a primary contact point between the university and the corporate world. Professional staff members of the center engage in an open employer development program, which includes visits to employer locations. These visits help familiarize businesses with the university's academic programs and other services available to them. Through the cooperative education program, employers enter into a partnership with the university. The

employer receives carefully selected, highly motivated, career-oriented student workers for two alternate semesters. The pairing of students can provide year-round job coverage. The employer, in turn, provides experience in an area commensurate with the student's academic and/or career interests.

By alternating study with full-time, paid work experience in their intended fields, students in the cooperative education program have opportunity to apply principles learned in the classroom to real work situations. The coop assignment provides correlation of practical experience with one's academic program and career objectives. The student may join an employer organization in business, industry, government, or social agencies. Two coop work experience terms separated by an academic term on campus are scheduled, providing progression through assignments of increasing complexity accompanied by increasing responsibility.

Academic programs cannot be developed within a vacuum. Industry must be consulted to determine the skills in demand and how those skills can be incorporated into existing academic programs or new programs. At UWF, faculty members have served as consultants to local, regional, and national businesses. Faculty members have taken an active interest in working with individual businesses. Through its Office of Conferences and Workshops, the university offers a variety of training programs for local corporations. These programs can be tailored to meet the specific needs of one or several employers.

Through the university's placement services office, employers get the opportunity to conduct on-campus interviews with graduating students. The office also provides employers the opportunity to list full-time, part-time, or summer employment vacancies. Employers seeking experienced applicants can list these needs with the university's alumni placement service. A file search of alumni actively seeking employment is made and information concerning qualified applicants mailed to the employer.

The university enjoys definite benefits from its corporate/college relations programs. The open lines of communication developed through these efforts allow UWF to become more aware of what is happening in the outside world. Through its off-campus activities, the university also meets its civic and service responsibilities. By providing opportunities for career-related work experi-

ence and employment interviews, the university meets one of its missions for its students. Finally, the university and its individual academic departments are the recipients of an increasing amount of corporate funds and equipment. Corporations recognize universities that assist them in meeting their needs or solving their problems.

Employers also benefit from this type of relationship. They gain access to university faculty expertise and research facilities, to a source of trained manpower, and are provided with an opportunity to influence curriculum development.

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Wichita State University (KS)

Workshop: Appraisal of Utilities and Railroad Property for Ad Valorem Taxation
Center for Productivity Enhancement
Other Business and Engineering Programs

Warren B. Armstrong, President
Myrne Roe, Executive Director, University Communications

Institutional Setting

Wichita State University began in 1895 as Fairmount College, a private liberal arts college. The City of Wichita assumed financial support in 1926, making the University of Wichita the first municipal university west of the Mississippi. In July 1964, WSU joined the Kansas Regents system.

There are about 17,000 students and over 600 faculty members at Wichita State. Faculty ranks are complemented by 175 part-time lecturers and 300 nonsalaried adjuncts from the community. There are 173 administrators.

Wichita State University is responsible to the Kansas Board of Regents, appointed by the governor. In addition, WSU has a board

of trustees, also appointed by the governor, which administers the 1.5 mill levy the city and county allocate to WSU.

WSU has six undergraduate degree-granting colleges: business administration, education, engineering, fine arts, health professions and liberal arts and sciences. One hundred eighty-five academic majors are offered within the six undergraduate degree colleges. University college and the division of continuing education offer classwork for students not yet admitted to one of the six degree-granting colleges.

The graduate school offers master's, specialist, and doctoral programs. The master's degree is offered in forty-six disciplines. WSU offers the degree of Doctor of Philosophy in the fields of communicative disorders and sciences and of engineering. In addition, the board of regents has authorized WSU to enroll students in Ph.D. programs in physical, bioorganic and bioanalytical chemistry, and applied mathematics. WSU graduates nearly as many advanced-degree students as undergraduate students.

WSU is the only urban university in the regents system and is located in Wichita, the largest city in Kansas, with a metropolitan area population of over 450,000. Agribusiness, general aviation, and oil and gas are the area's major industries. Wichita is also becoming a major setting for health-related industry, with four medical centers and the regional Veteran's Administration center. Corporate offices located in Wichita include Pizza Hut and Coleman. McConnell Air Force Base and Boeing Military Aircraft Company are also located in Wichita.

Nearly 19,000 of WSU's alumni live in Wichita. Each year nearly 1,400 graduates enter the local job market. WSU is one of the top twenty employers in Wichita and annually contributes an estimated $90 million to the local economy. WSU's ties with business and industry are evidenced by the move toward more Ph.D. programs relevant to local needs; through research relevant to those needs; and through faculty and administrative involvement in community, business, and government programs.

The Programs

The college of business administration is an active partner with the corporate community. In addition to the appraisal of utilities and railroad property for an ad valorem taxation program (de-

scribed later in this section), the college operates several other corporate linkage programs, including: center for entrepreneurship and small business management, Kansas small business development, real estate and land use economics, management development, economic development and business research, economic education, management and human resource development; aviation management; school of accountancy; and legal assistant program.

Of particular note is the program for the appraisal of utilities and railroad property for ad valorem taxation, cosponsored by the college of business administration and the National Tax Association/Tax Institute of America.

An annual workshop covers in detail the appraisal of utilities and railroad property for ad valorem taxation. Various approaches to valuation and the application of these approaches are emphasized.

The program brings together representatives from all facets of the industry: academics, professional appraisers, industry representatives, and state and local government officials. In an educational environment conducive to open and frank discussion, the issues facing both industry and government in the appraisal of public utility and railroad property for ad valorem taxation are delineated.

A committee representing the industry—academic, private sector, and state government—plans each program. This committee is jointly appointed by the college of business administration and the NTA/TIA. A representative of NTA/TIA and the dean of the college of business administration serve as joint overall coordinators for the program. Once a program is designed, individual members of the planning committee serve as moderators/coordinators for various parts of the program. Administering the details associated with the workshop, such as housing, meeting space, printing, registration, and the like, is the responsibility of the college of business administration.

Initiated in 1971, the workshop annually attracts approximately 400 individuals from 35-40 states across the country. The audience is predominately practicing professionals in the field of public utility and railroad property appraisal for ad valorem tax purposes. The workshop is held in late July or early August and is 3-1/2 days

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The workshop appeals to two broad groups: individuals new to the appraisal field, and those who are more experienced. For the first group, a basic course on principles of appraisal is offered. A concurrent advanced program is offered for the experienced professional. About one-half of the audience each year is new to the field.

The faculty for the program is a national one, drawn for the academic, private, and government sectors. These individuals tend to be practicing professionals or active consultants in the field. In addition to administering the program, the university seeks to ensure the preservation of the "educational" intent of the program and a proper "balance" of views.

The cooperation and support of the corporate community are needed to provide qualified individuals to serve on the planning committee, assist in the location and identification of suitable individuals to serve as faculty for the program, and encourage attendance at the workshop.

The idea for the program originated with a member of the National Tax Association/Tax Institute of America, and an individual involved in appraisal work. These persons worked with a member of the faculty of the college of business administration to promote the idea within both the university and NTA/TIA. They convinced the university and NTA/TIA to sponsor the first program. At the beginning of the program, the planning/negotiations were fairly informal. The NTA/TIA agreed to guarantee an amount up to $2,500 to cover any loss. The university agreed to provide facilities and equipment.

After the initial effort was judged a success, subsequent programs were scheduled. The workshop has accumulated sufficient funds to permit trying some new activities, and operating without undue fear of a bad year or cash flow problems typically associated with such programs. The corporate sponsor has requested discussions about profit sharing and indicated a desire to become more formally involved. These discussions are underway.

The dean of the college devotes about two or three weeks' time to the workshop program. A faculty member serves on the planning committee. The college's center for management development assumes responsibility for the administrative details of the conference. Estimated involvement is the equivalent of a month's

work during the year. No alterations in campus administrative or governing structure or procedures have been necessary, nor have there been any hindering campus, union, or state regulations.

The WSU Center for Productivity Enhancement conducts basic research on transferring technology to existing industries. The center addresses industry problems in four areas: advanced composite materials, computer-aided design and manufacturing, robotics, and artificial intelligence. A primary activity of the program is teaching 200 industry people a year to use CAD/CAM software in computer-aided design and manufacturing through its CAD/CAM laboratory. The center assists private industry through direct consultation with individual companies, adaptation of existing technology to the needs of industry, and research projects. It also offers seminars, courses, and training programs to area companies. Center programs are ongoing throughout the year.

Now in its fourth year, the center has a director, approximately one dozen faculty associates, and 2-3 graduate assistants. The nearly 300 Master of Science and Doctor of Philosophy students in the college benefit from the center's research.

The Kansas Commission for Advanced Technology proposed the idea for the center. The legislature earmarked state funds to be used in conjunction with private money for the development of "Centers of Excellence" at four Kansas universities. Wichita State's Center for Productivity Enhancement is one of those centers. Wichita industry leaders, the Wichita Chamber of Commerce, and the University's Resource Action Team worked together to develop the center's goals.

The center is managed internally by the president of the university, the executive director of the Institute for Aviation Research and Development, the dean of the college of engineering and the director of the center. A half-time director, a full-time secretary, and a dozen faculty members, who may devote up to 25 percent of their time, form the staff.

In addition to the center, WSU's college of engineering has other corporate/college programs, including: wind tunnel research in cooperation with Beech, Cessna, Gates Lear Jet, and Boeing Military Airplane companies—all Wichita industries; the rehabilitative engineering center's creation of work-enhancing devices for severely handicapped employees at Center Industries; student assist-

ant involvement with the testing division of NCR; graduate courses taught on site at Boeing; and an industrial advisory board practicum with fifteen area chief executive officers.

Afterword

Some Personal Thoughts on Business/Academic Partnerships: An Enterpreneurial Strategy

Robert M. Bersi, Chancellor Emeritus, University of Nevada System, and Vice President for Development, California State University, Long Beach

When a major corporation gains confidence in a university and its leaders, it invests not only its money but its reputation and organizational zeal in supporting the mission of that university. Those colleges and universities determined to stay at the cutting edge of American higher education will be those that master the art of recruiting to their cause the wealth, reputation, and influence of powerful private sector organizations.

Corporate philanthrophy is not new to American higher education. The twentieth century is full of examples of industrial support of education and university-centered research. The motivation behind such giving and receiving has nearly always been mutual self-interest. When California Institute of Technology developed a school of aeronautics in the 1920s—heavily supported by the growing aeronautics industry—all parties benefited, not the least of which was a nation yet to face World War II and the burgeoning age of air transportation.

Corporate and business support of higher education has steadily increased since the 1920s, though for a while the vast majority of such money still flowed to a handful of the most prestigious research-oriented institutions—the Cal-Techs, Stanfords, MITs, Harvards, RPIs, and others. In more recent years, rather than concentrating corporate commitment on "celebrity" research institutions, business leaders have begun to broaden their involvement, seeking ties to regional colleges and universities as well.

Corporations have discovered that the only way to coexist in an era of consumerism, affirmative action, environmental concerns, widely dispersed and shifting political power bases, and dollar-

starved deteriorating cities is to become the corporate good neighbor, sharing and addressing the concerns of the community-at-large through the local college or university.

Thus the door has opened wide to the latest and most promising form of corporate-university relations: "corporate partnering." Joint ventures have become a key element in college and university development plans, for good reason: the costs of research and educational programs in such explosive growth areas as electronics, communications, engineering plastics, special chemicals, biogenetics, and pharmaceuticals (to name a few) are straining academic budgets. Few if any universities can claim sufficient resources to meet desired goals in these and a host of other fields. Increasingly, boards, administrators, and faculty members look to the great wealth of industry for joint participation.

Colleges and universities employ various strategies in pursuit of corporate support. A fortunate few can dedicate large staffs and major development budgets. Most American colleges and universities find it financially and politically impossible to divert significant resources to such an effort, regardless of potential benefits. They seek other ways to tap corporate wealth. I favor a highly personal, entrepreneurial approach to dealing with private corporations, involving much time and energy from the college/university president and staff and, to a critical extent, key faculty project development teams.

This strategy rests upon two basic premises. First, chief executives talk to chief executives. The shortest distance between two points is still a straight line; once I'm completely confident of the merits of any proposal, I want to hear the corporate CEO's reaction to it. A request for a brief meeting with the chairman of the board, the president, or a division head is not out of line in most cases and can save a lot of time and energy by accelerating the decision-making process.

Second, a hand held out palm up is not nearly as well received as a handshake. From start to finish, think partnerships. Think *partnership,* not *gift.*

The entire process seems to divide naturally into three functional areas—preparation, contact, and follow-through—forming an integrated cycle of activities that perpetuate and improve the process.

This is how it works: First, think of corporations as individuals, each with a unique personality. Indeed, the corporate persona is the sum of its experiences, the product of the environment in which it developed, and the people who built it, ran it, and now control its destiny. This is most evident in small to medium-size organizations that often reflect the personal style of the president, especially if he or she founded the corporation, is still a large stockholder, and projects a strong sense of ownership. The giants have their own character, too. In short, Corporation X is not Corporation Y is not Corporation Z. Awareness of the special traits of each is a first step toward approaching each successfully.

Second, keep in mind that in addition to size, each corporation is probably in a different state of financial and organizational health. These conditions will affect its response to any proposition. The CEO of a growing high-tech organization that has recently gone public, caught the upswing of a bull market, and who owns a third of the common shares outstanding, is going to be a distinctly different kind of person with whom to deal than the CEO of a Fortune 500 company in the same general industry. Dealing with the former can be a very fast track affair with stunning results—if you've prepared the ground properly.

To illustrate, for years I have made it a practice to identify and follow a handful of promising start-up corporations in electronics and other high-growth areas, usually long before their first public offering. It's easy to get acquainted during this period and, with rare exception, these corporations are led by imaginative, dynamic, young entrepreneurs who make great friends and acquaintances. Moreover, these organizations are usually so open that one cannot help but learn a great deal by interacting with the best of them as they evolve.

One such corporation made its first public offering in the midst of the boom in the electronics market. The company's stock tripled in value in four months. At dinner to celebrate his success, the corporate president and I turned the conversation to a favorite theme—a mutually held conviction that American industry and American higher education must bond in partnership and pool resources if we are to produce the intellectual property our nation needs to maintain its world position. He pushed his dinner napkin toward me and on it was written, "$1,000,000 cash." This was the

first in a series of actions that cost him a great deal more than $1,000,000 and which produced, in my opinion, a model of corporate-college partnering.

Third, before attempting contact of any kind with a corporation, it is absolutely essential that one be as knowledgeable as possible about that organization and the people who run it. The formula is simple enough: do the research. Standard and Poor's three-volume *Register of Corporations, Directors, and Executives* is a mandatory general reference work with a wealth of information on corporate function, structure, and key people. Specialized reference works are next; for example, the two-volume *Data Sources*, a guide to products and companies, micros to mainframes, and a guide to all software product companies, is excellent. Don't ignore obvious publications such as annual reports. Study analysts' appraisals of company performance history. Acquire appropriate trade journals and business periodicals. Subscribe to the handful of daily newspapers that cover the particular industry area in which you are interested. Don't overlook the business section of the local newspaper covering the region in which your corporation is located.

It is also important to get a sense of a company's inner workings: the characteristics and style of top management, the history of product success or failure, the dynamic tension between competing divisions, and so forth. Columnists and business reporters attempt to cover such activities, but this is a good area in which to invest some of your own time and effort. Keep regular telephone contacts with friends in a target industry area; a little gossip is inevitable, but plenty of valuable information gets exchanged along with it. Former employees—especially top executives who have moved on to other responsible posts—are a willing source of information. Usually you can tell when an ax is being ground and can adjust for it. Finally, trade shows and conventions offer an open, accessible environment for gathering and exchanging information and making acquaintances.

Any corporate contact strategy should have both general and specific objectives. Generally, you want to make the kind of strong positive impression that forms the basis of an on-going relationship. Specifically, you want to suggest one or more areas where the university and the corporation might cooperate and mutually benefit.

Contact for the purpose of proposing a cooperative project can occur at any number of levels within a corporation. Large projects involving substantial resources and long-term commitments should be introduced initially at the highest level of the corporate ladder. Most chief executives, after grasping the general idea of what is proposed, will express interest or lack of interest. If the CEO shows no interest, you have saved everyone a lot of time. An interested CEO will almost always refer the matter to officers and staff for review and reaction. If the request comes from the top, you usually can count on immediate attention. Whether the CEO likes or doesn't like your ideas, he or she might be so impressed with the university's understanding of the industry and company organization that future entry to the CEO's office is assured.

Successful contact and cultivation at the CEO level inevitably leads to better understanding between organizations and, in many cases, to personal friendship. Well-acquainted people share their problems more openly, which can lead to some very unexpected solutions.

While I drove across town with a CEO friend one afternoon, he began thinking aloud about the problems his people were having in deciding where to locate a new computer-aided design (CAD) center. His corporation was headquartered in another state, but his rapidly expanding production operation was located in ours. The computer-aided design center, he believed, should be near his production function, but where? And how could he be certain his key design engineers would like the new location?

The next thing he knew, he was being driven through the university campus. I suggested that a way might be found to locate his CAD center in the old engineering building. Five months and $3.7 million later, a state-of-the art CAD center opened its doors in our college of engineering. Faculty members and students gained hands-on access to the latest and best equipment available; corporate engineers were delighted with their work environment; and the corporation benefited from the brightest and best engineering talent at the university.

The circumstances by which one makes contact have a great deal to do with the receptivity of a corporate CEO. With this in mind, I often rely on a trusted business acquaintance who is a "corporate peer" of the executive I wish to meet. A letter, or better yet a

phone call, from such a credible source can go a long way toward reassuring a busy CEO that a luncheon or an hour meeting won't be a waste of time. Of course, personal introductions are best, especially when the party who brings you together is a top officer or director of a name corporation and whose trust and support you clearly enjoy. Building a network of such reliable corporate colleagues is a career-long enterprise and one of the most valuable professional assets you will ever possess.

Maintaining such relationships requires a substantial investment of time. When a corporate acquaintance asks for your assistance in some matter, your response should be prompt, enthusiastic, and effective. Sometimes your efforts produce unexpected dividends.

I recall the time an account executive with a national public relations firm telephoned to ask whether I would meet with a client of his—the president of a Canadian computer software firm who wanted to learn more about the West. Two weeks later, we met at the CEO's New York hotel for a breakfast that stretched into lunch. His initial interest in a western distribution center led to my involvement in a three-state site location tour, a search for U.S. financing sources, a joust with the Department of Immigration, and the hiring of key U.S. employees. The corporation has since made a $1.5-million gift to establish a systemwide software bank for faculty and students and has announced the decision to locate its entire U.S. operation less than ten miles from the college campus.

Few corporations will conclude a major cooperative agreement without visiting you on your home turf. Indeed, the university chief executive and the chairman of the board of trustees or regents should make a formal invitation directly to the CEO. A great deal of planning should go into preparing for this visit. If you are fortunate enough to have a governor or other high public official who values the university's corporate efforts and you have kept that person informed and involved, you have a particularly powerful ally with whom to make a lasting impression on corporate visitors to your region.

One Fortune 500 CEO still warmly recalls his "unscheduled" cup of coffee at the governor's mansion. The president of a major Japanese manufacturing company marveled at his cordial introduction on the floor of the state legislature as well as his meeting with

the governor—who impressed the CEO with his knowledge of the Pacific Rim. After meeting with faculty members, administrators, regents, business leaders, and the governor in a single day, a division head of a major computer company recommended a substantial partnership based on the top-to-bottom enthusiasm and commitment he had encountered.

My grandfather was fond of saying that business is a lot like billiards: a winning game requires good follow-through. It is always an elevating experience to conclude a project that brings important new resources and visibility to one's campus. But the responsibility does not end there. Successful partnering requires careful tending to build the inventory of trust necessary to achieve productive, long-term corporate-university cooperation.

In many ways, once a corporate partnership agreement is struck the work has just begun. The delicate task of cementing a new relationship is crucial—and it is a responsibility that cannot be entirely delegated. Even though the actual work may be done by others, the corporate and college CEOs' continued interest and communication is vital as corporate and academic professionals begin a working relationship that can eventually bond professors, presidents and politicians in a common pursuit of excellence.

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